



SEPTEMBER 1958

# CONCRETE

For producers of concrete block, precast and prestressed concrete products and ready mixed concrete




auditorium • coliseum

Municipal Auditorium and  
Coliseum, Charlotte, N. C.  
Arch't. — A. G. O'Dell, Jr.  
& Associates,  
Charlotte, N. C.  
Struct. Engr. — Severud,  
Elstad, Krueger,  
New York, N. Y.  
Contr. — Thompson & Street Co.,  
Charlotte, N. C.  
Pozzolith ready-mixed con-  
crete — Concrete Supply  
Co., Charlotte, N. C.  
Below — view of 2500-seat  
auditorium.  
Bottom Photo — section of  
13,500-seat coliseum.

**Concrete of good appearance  
and other desired  
qualities with**


**POZZOLITH\***



In the construction of this outstanding municipal auditorium and coliseum — as with many other important projects built since 1932 — Pozzolith proved a valuable aid in improving cohesiveness and plasticity, to enhance the appearance of exposed concrete.

Beauty and utility with architectural concrete is but one of the advantages obtained with Pozzolith . . . key to the control of:

1. water content . . . makes possible lowest water content for a given workability.
2. entrained air . . . provides optimum air content without sacrificing other desired qualities.
3. rate of hardening . . . provides desired handling and finishing time under widely varying job conditions.



Any one of our more than 100 seasoned fieldmen will be glad to demonstrate the full benefits of Pozzolith for your project, and to advise of the availability of Pozzolith Ready Mixed Concrete through more than 1000 qualified producers.

**Mr. Ready-Mix  
Producer . . .**  
this advertisement  
appears in leading  
national magazines  
read by your  
customers


\* POZZOLITH — registered trademark of The Master Builders Company  
for its time-tested water-reducing, air entraining admixture for concrete.



**THE MASTER BUILDERS CO.**

DIVISION OF AMERICAN-MARIETTA CO.

General Offices: Cleveland 3, Ohio • Toronto 9, Ontario • Export: New York 17, N. Y.  
Branch Offices In All Principal Cities • Cable: Mastmethod, N. Y.



**Completely assembled 3-foot telescoping head and Completely assembled 4-foot tail end Any conveyor length from 9' to 102' in 1' increments**

**2 to 12' telescoping sections in 1' increments are easily joined in minutes.**

**Telescoping head and tail end sections are easily joined in minutes.**

**Sections may be 12' or 24' long.**

**Barber-Greene Transfer-Conveyors are available in lengths from 9' to 102' in 1' increments. Belt widths are 18", 24" and 30". Horsepower ranges from 1/2 to 10 HP. The telescoping sections are joined in minutes. The telescoping sections are joined in minutes. The telescoping sections are joined in minutes.**

**Selecting your**

**WIDTHS: 18", 24", 30" LENGTHS: 9' to 102' in 1' increments.**

**MAKING YOUR CHOICE**

The maximum angle of incline is 18° for lengths up to 40' and 12° for lengths over 40'. The maximum angle of incline is 18° for lengths up to 40' and 12° for lengths over 40'. The maximum angle of incline is 18° for lengths up to 40' and 12° for lengths over 40'.

**TABLE A BELT WIDTHS**

MAXIMUM CAPACITIES in tons per hour	18" BELT	24" BELT	30" BELT
1000 and over	1000	1000	1000
500 and over	500	500	500
250 and over	250	250	250
100 and over	100	100	100
50 and over	50	50	50
25 and over	25	25	25
10 and over	10	10	10
5 and over	5	5	5
2 and over	2	2	2
1 and over	1	1	1

**TABLE B HORSEPOWER**

MAXIMUM CAPACITIES in tons per hour	18" BELT	24" BELT	30" BELT
1000 and over	1000	1000	1000
500 and over	500	500	500
250 and over	250	250	250
100 and over	100	100	100
50 and over	50	50	50
25 and over	25	25	25
10 and over	10	10	10
5 and over	5	5	5
2 and over	2	2	2
1 and over	1	1	1

**TABLE C HORSEPOWER**

MAXIMUM CAPACITIES in tons per hour	18" BELT	24" BELT	30" BELT
1000 and over	1000	1000	1000
500 and over	500	500	500
250 and over	250	250	250
100 and over	100	100	100
50 and over	50	50	50
25 and over	25	25	25
10 and over	10	10	10
5 and over	5	5	5
2 and over	2	2	2
1 and over	1	1	1

**YOU CAN EASILY SELECT YOUR OWN CONVEYOR RIGHT FROM THE CATALOG FOR FASTEST DELIVERY Write for your copy**

## New, low-cost belt conveyor now available in lengths to 102'

If you handle bulk materials, you should have a copy of the new Barber-Greene Transfer-Conveyor Catalog. With it, you can readily select your own conveyor. Belt width and horsepower are automatically correct for your job.

The Barber-Greene Transfer-Conveyor has cut costs on so many jobs that its range has now been extended to 102' in 1' increments. Belt widths are 18", 24" and 30".

Because the Transfer-Conveyor is pre-engineered and made up of standardized components, special engineering time and expense are eliminated, and shipment is from stock—usually from the local distributor's stock. Erection is merely a matter of bolting the major components together and positioning the conveyor. Sectionalized construction gives flexibility for lengthening or shortening to meet future requirements.

### Other Transfer-Conveyor advantages include:

- Rigidly braced channel frame allows 7' overhang at head end, 18' spans between supports.
- Head and tail end sections shipped completely assembled, aligned and adjusted.
- Heavy-gauge steel decking protects return run of belt.
- Worm gear reducer, running in oil, cuts maintenance expense.
- Ball-bearing carriers assure long, trouble-free life.
- Heavy thread screws provide belt tension adjustment.
- Parts interchangeable and repair parts readily available.

58-20-TC

# Barber-Greene

AURORA, ILLINOIS, U.S.A.

CONVEYORS...LOADERS...DITCHERS...ASPHALT PAVING EQUIPMENT

SEPTEMBER, 1958

For more information use postcard facing page 56.

1





## *Motorola Private-Line radio...the new kind of 2-way radio*

This new concept in 2-way radio communications has been best described by satisfied users... "It's almost as if we had the channel all to ourselves. We only hear our own messages."

Motorola Private-Line radio is completely quiet except when receiving messages from your own dispatcher. Channel Chatter is gone. Drivers no longer have to listen to the constant stream of messages from other radio users on the same channel. Missed and misunderstood messages are virtually eliminated...overall efficiency is increased.

And now new Private-Line radio with *Dual Squelch* makes the changeover easy for those already equipped with Motorola radio. During the transition period, your messages can be received by both present equipment and Dual Squelch Private-Line radio.

New system or old, get the full story on Motorola Dual Squelch Private-Line radio. Call your Motorola communications specialist or write for detailed brochure and case history of how a company like yours can increase profits with Motorola radio.



## **MOTOROLA** PRIVATE-LINE 2-WAY RADIO

Motorola Communications & Electronics Inc., A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Illinois



SEPTEMBER 1958

# CONCRETE

For producers of concrete block, precast and prestressed concrete products and ready mixed concrete

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## FEATURES FOR THIS MONTH

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*Two fork trucks, sometimes working singly, sometimes in tandem, do the lifting and hoisting work for Protast Industries, Inc., Kalamazoo, Mich.*

### Southern Concrete Co. Heats Its Water with LP-Gas .....29

*With its plant site too far out for city gas mains, Southern Concrete Co. installs an LP-Gas storage tank and burner to heat water in winter time.*

### Manufacturing Concrete Brick .....30

*Gordon W. Schmidt, who has written extensively on the use of color in concrete, discusses some of the production and marketing techniques necessary for a profitable concrete brick operation.*

### Bow-Legged Beast Moves Huge Pipe .....35

*United Concrete Pipe Corporation designs and builds a special handler for hoisting and transporting pipe weighing 85 tons.*

### "Below Strength" Concrete .....36

*A report of "below strength" concrete doesn't necessarily mean the concrete is faulty. Other factors can contribute to a lower indicated strength, among them the testing procedure used. Here is an article, which among other points, capsules the procedure for obtaining and handling test cylinders. By Alvin T. Klassen.*

### Branching Out on Repeat Business .....38

*Jennings Ready-Mix, Inc., Norwalk, Ohio, had two substantial reasons for setting up a branch plant in Ashland, Ohio, 40 miles south: (1) a 20,000-cu.-yd. contract, and (2) the possibility of capturing some of the concrete business in and around Ashland.*

### Conventions Can Be More Profitable—Editorial .....27

*Thinking and planning ahead for how best to attend and partake of the activities of the coming NCMA convention and show, in Cleveland next January, should add to the effectiveness of your company's participation and also the extent of your personnel's take-home ideas and insight.*



Advertising Representatives: Porter Wylie & Co., 114 East 13th St., New York 3, N. Y., Phone: Gramercy 5-3581; Crawford L. Elder, 2500 El Venado Drive, La Puente, Calif., Phone: Oxford 4-4116; Clarence L. Morton, 294 Washington St., Boston 8, Mass., Phone: Liberty 2-8538. Subscription Price: \$6.00 for one year, \$11.00 for two years, postpaid. No subscriptions accepted for longer than two years. Single copies, 50 cents each. Copyright 1958 by Concrete Publishing Corp. Accepted as controlled circulation publication at Mendota, Ill.

QUICK OPENING DOORS

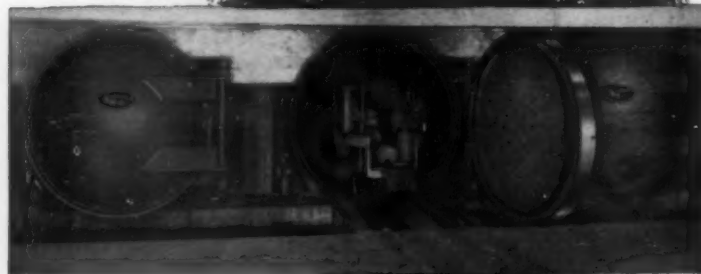


STRUTHERS WELLS

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DOORS



Locking ring compression when door is closed forcing door flange against well flange to seal against pressure or vacuum.



### ONE FAST, AUTOMATIC ACTION CLOSES AND LOCKS

Simplicity of operation is one of the outstanding features of Ring-Lok Doors. 45 seconds is all it takes to hydraulically open and close a Ring-Lok up to 12' in diameter. Resilient lip-type gasket is used for positive sealing against pressure or vacuum. Satisfied users report gasket service as high as 600 cycles for this door so ideally suited to the Concrete Block Industry.

Struthers Wells Corporation is the sole manufacturer of Ring-Lok Doors which you will find are low in initial cost, low in maintenance cost and unsurpassed in performance. Be sure your autoclave specifications call for Ring-Lok Doors; accept no substitute.

ASK FOR BULLETIN SW-553

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**STRUTHERS WELLS Corporation**

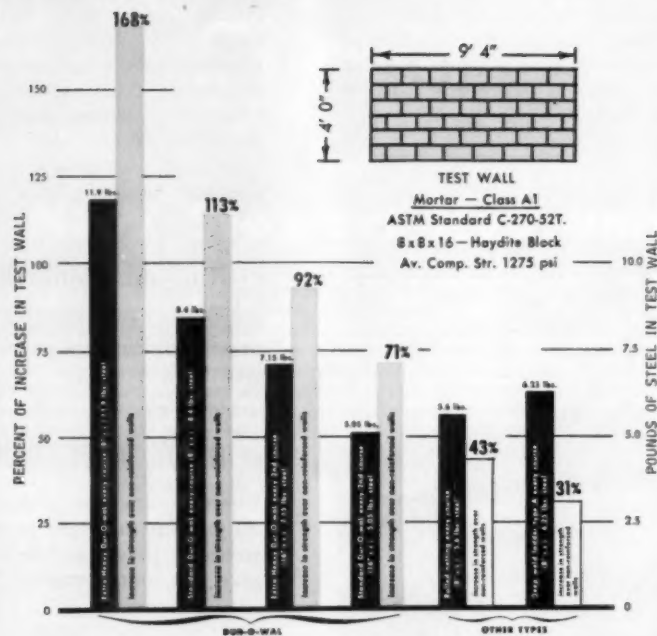
TITUSVILLE, PA.

**Struthers  
Wells**

Plants at Titusville  
and Warren, Pa.

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# Test Results Prove that DUR-O-WAL is your Most Economical and Effective Steel Masonry Reinforcement



Dur-O-wal with patented trussed design out-performs other reinforcements two to one . . . reduces lineal foot requirements by half . . . cuts building costs. Every pound of high tensile steel in Dur-O-wal works twice as hard because the exclusive trussed design and superior bonding characteristics make every inch work together as a unit. Test results prove why building experts insist on Dur-O-wal . . . the steel masonry reinforcement that exceeds ASTM specifications . . . by far your best and most economical buy.

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Tests Conducted by Toledo University Research Foundation



# TODAY... and in the years ahead A **BERGEN TRI-MATIC** gives you more for your money!

## --IN BLOCKS PER DAY

Can exceed 6 cycles per minute, 1,000 to 1,100 8" blocks per hour *average*, day after day, without strain or breakdown of parts. Similar high production rates in other standard or special types of blocks.

## --IN QUALITY BLOCKS

Every block is smooth, clean, accurate in size and uniform in density. This consistent quality builds and holds satisfied customers . . . cuts down losses due to culls and rejects.

## --IN AUTOMATIC OPERATION

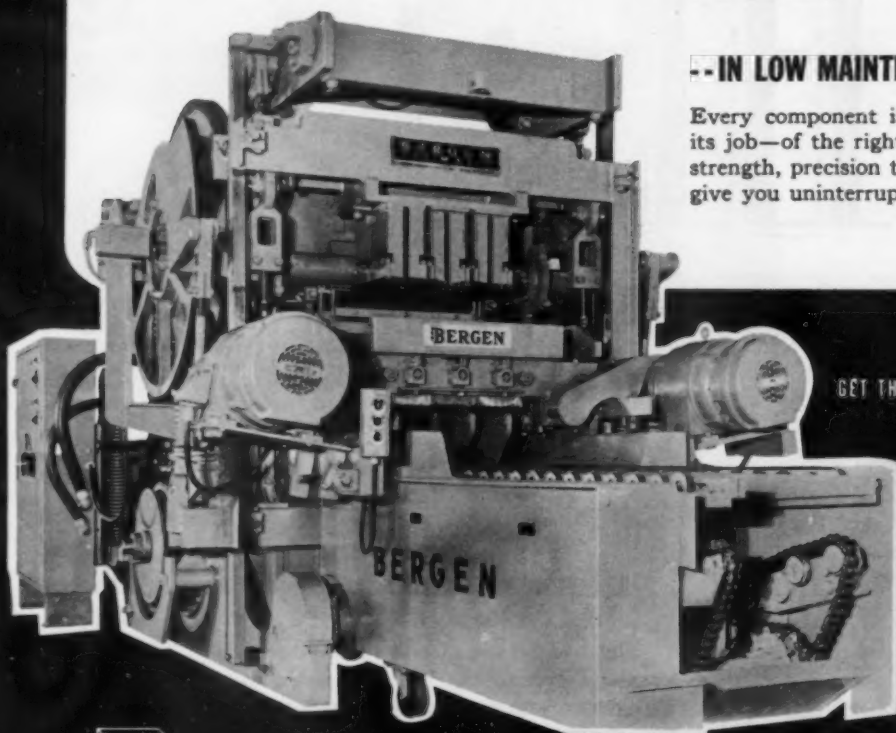
Positive-acting cam and roller operation—single power drive obtains positive timing of machine operation—heavy-duty, high-speed, automatic front pallet feeders—Zeromatic height and density control—pneumatic two-pallet high-speed hoist . . . all provide continuous high production, with minimum operator fatigue.

## --IN RUGGED CONSTRUCTION

Engineered and precision built throughout to provide continuous, trouble-free, high-production operation.

## --IN LOW MAINTENANCE COST

Every component is designed and made for its job—of the right material, to the correct strength, precision tolerances—to last longer, give you uninterrupted, low-cost production.



## GET THE FACTS BEFORE YOU BUY

Write for detailed literature, or have a Bergen engineer give you a point-by-point comparison with other block machines.



## CONVENIENT PURCHASE PLANS

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**BERGEN** MACHINE and TOOL CO., Inc.  
NUTLEY, NEW JERSEY

Bergen manufactures a complete line of Block Plant Equipment—Batch Mixers, Skip Hoists, Off-bearing Hoists, Height and Density Control Panels, Mold Repair Tables, and a full line of mold attachments and replacement parts.

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"BERGENCO" (Nutley, N.J.)

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## The NEW Stewart Hydramix

Now, the miracle of hydraulics is at the service of the ready-mix industry! At last, ready-mix operators can capitalize on hydraulic power, too! This means you can save on maintenance expenses . . . and, it means you can keep your equipment rolling more days of every month! Here are just a few of the exciting new features of the Stewart Hydramix: constant drum RPM (regardless of truck engine RPM) . . . positive action, lifetime, worm-gear drive . . . 90 gallon pressure water tank (standard equipment) . . . simple remote control system . . . hydraulic chute hoist (standard equipment). Get complete details on all the new features and price information. Call or write AMPOZ today.



"The ready package  
for the ready-mix  
industry"

**NO**

AUXILIARY ENGINE  
CHAIN DRIVE  
COMPLICATED CONTROLS

WRITE FOR  
ILLUSTRATED  
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STEWART HYDRAMIX.

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# White

NOW  
OF



### They know Whites are rugged!

Cleveland Builders Supply has been using Whites in its fleet since 1913, according to W. T. Rossiter, Chairman of the Board. Newest Whites are a fleet of 14 Model 9064 construction mixers with front power take-off. CBS has Whites in all phases of their operations—mixers, dumps, block trucks and others.



# HAS THE ONLY TRULY MODERN LINE CONSTRUCTION TRUCKS

**White Ruggedness and  
Durability are Engineered  
for bigger Payloads in the  
Construction Industry...  
Unmatched for Earning Power**

Ordinary trucks won't do for today's loads and schedules.  
Trucks have to be rugged and tough.

And these White Construction Tandems really are built  
to absorb the shocks, carry bigger payloads and keep right  
on coming back for more.

Every White feature is engineered for your exact work  
needs—for cost-saving performance and top earning power.

Why not investigate the exclusive advantage of White  
Construction Tandems for your business?

**THE WHITE MOTOR COMPANY**  
Cleveland 1, Ohio



**...GREATEST NAME IN TRUCKS**



In a typical fleet, averaging 11 daily 6½ cu. yd. deliveries per truck, new Jaeger "F" mixers average 12 trips. With 10 trucks this means 65 cu. yds. more daily production, all above break-even point.

# New Formula raises profits on ready mixed concrete

**More yardage produced above break-even point by increasing trips per truck**

For years, most of the ready mixed concrete industry has been concentrating on one formula: *The bigger the truck payload the lower the cost per cubic yard.*

This still makes sense, *as far as it goes.* Drivers' wages are the same, and larger trucks and mixers cost only a little more to own and operate. Because of this, the whole industry has been busy equipping itself to handle *the largest truck payloads possible under legal load limitations.*

## More Profit Demands New Formula

But what if you go a step further and increase the number of trips per truck? Then, your productivity really goes up, and without any increase in your driver payroll or truck mixer investment.

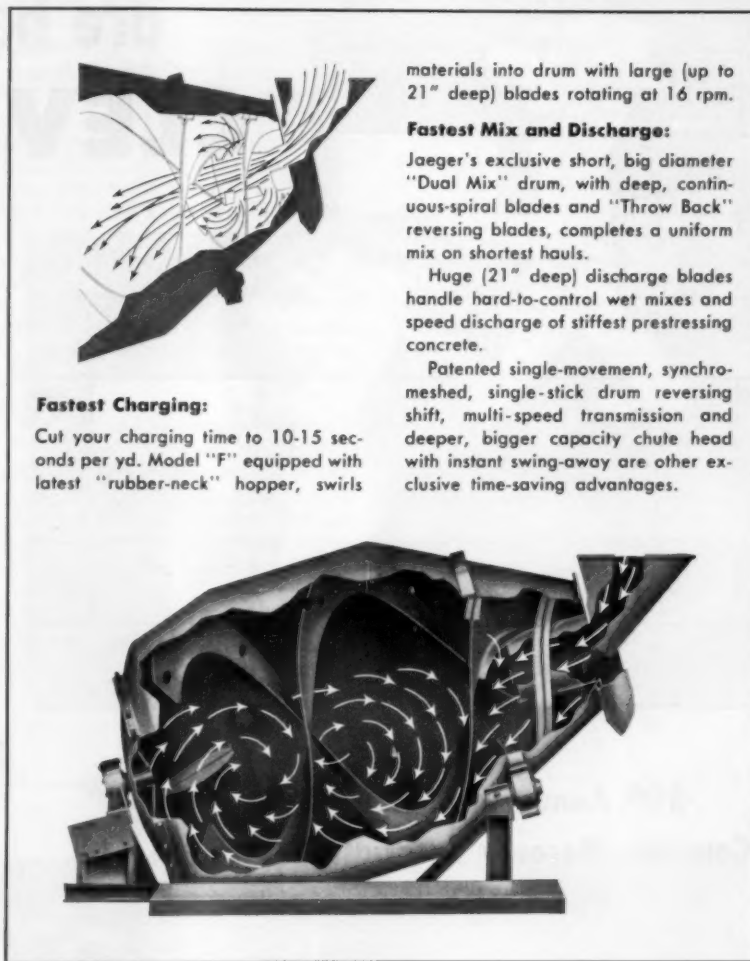
This is the "Trip" factor (Payload × Number of Trips = Daily Production of Truck Mixer) that has made the high speed Jaeger Model "F" truck mixer the most talked-of-and widely adopted truck mixer built today.

## An Extra Trip per day

The Jaeger Model "F" is not merely "faster" to charge, mix and discharge—the fact is that the Model "F" is *so much faster* to charge, mix and discharge that each truck will easily average *one trip more per day* than you are getting with your present equipment. And every one of those additional truck trips means a maximum-size payload produced at maximum profit.

\* \* \* \* \*

## COMPLETE NEW CATALOG GIVES FULL FACTS — SEND TODAY



### Fastest Charging:

Cut your charging time to 10-15 seconds per yd. Model "F" equipped with latest "rubber-neck" hopper, swirls

materials into drum with large (up to 21" deep) blades rotating at 16 rpm.

### Fastest Mix and Discharge:

Jaeger's exclusive short, big diameter "Dual Mix" drum, with deep, continuous-spiral blades and "Throw Back" reversing blades, completes a uniform mix on shortest hauls.

Huge (21" deep) discharge blades handle hard-to-control wet mixes and speed discharge of stiffest prestressing concrete.

Patented single-movement, synchro-meshed, single-stick drum reversing shift, multi-speed transmission and deeper, bigger capacity chute head with instant swing-away are other exclusive time-saving advantages.

Please send copy of your new Catalog TMH8, just off the press, giving detailed information about construction,

operating characteristics and optional equipment of Jaeger Model "F" Hi-Speed Truck Mixers and Agitators.

YOUR NAME \_\_\_\_\_

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## THE JAEGER MACHINE COMPANY

522 Dublin Avenue, Columbus 16, Ohio

Jaeger Machine Company of Canada, Ltd., St. Thomas, Ontario





# Chips off the ol' Block are headed for **CLEVELAND**

**39th Annual National  
Concrete Masonry Association  
Convention**

.....

**11th Concrete Industries  
Exposition**

.....

**Cleveland  
Public Auditorium  
January 12-15, 1959**



COME SEE PROGRESS, 1959 jam packed into four days of NCMA's exciting new Convention and Concrete Industries Exposition! See how up-to-the-minute research and promotion ideas are going to build bright new thresholds to profit for you in '59! Over 4000 of your concrete products associates will be on hand to discuss new markets, to share every advanced method of paring costs to a minimum, ways and means of coping with the new economic situations existing today. You can't afford to miss it! Add, too, the big plus of seeing Cleveland!

NATIONAL CONCRETE MASONRY ASSOCIATION  
38 SOUTH DEARBORN • CHICAGO



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Louise D. Perkins, Director, Cleveland Housing Bureau  
511 Terminal Tower, Cleveland 13, Ohio

# FROM THE NEWS DESK

## New Book on Concrete As Shield From Radiation

The American Concrete Institute is offering a new publication, *Concrete for Radiation Shielding*. The new brochure is a 132-page compilation of seven papers on the use of concrete for shielding nuclear radiation and the calculating of proportions and properties of various heavy concretes. These seven papers are summarized as follows:

*Concrete for Radiation Shielding* emphasizes factors related to concrete technology and cost. Tables and curves of concrete thickness required for shielding are given for both ordinary and heavy concrete. Problems involved in the use of special concrete are discussed and an outline of a procedure for designing concrete shielding is presented.

Absorption by Concrete of X-Rays and Gamma Rays reviews the experimental work performed by the National Bureau of Standards to establish data with which concrete barriers may be designed. A brief discussion of the methods used in protective barrier design is included and

the relative merit of several barrier materials, including heavy concrete, is discussed.

*Properties of High-Density Concrete Made with Iron Aggregate* presents data on the physical properties of several types of mortar and concrete made with iron-bearing aggregate. Heavy aggregates used in this investigation included steel punchings, fine steel shot, ferrophosphorus, magnetite, and limonite. Both the prepacked method and conventional methods were used for fabricating concrete specimens. Data obtained at elevated temperatures as well as data obtained from standard tests on aggregate, concrete, and mortar are presented.

*Heavy Steel-Aggregate Concrete* is a discussion of various mix proportions for heavy concrete and a proportioning procedure for concrete of given strength and density. The primary object of the investigation was to determine a procedure for the improved proportioning of mixes using steel punchings as coarse aggregate with steel shot of varying size as fine aggregate.

*Properties of Heavy Concrete*

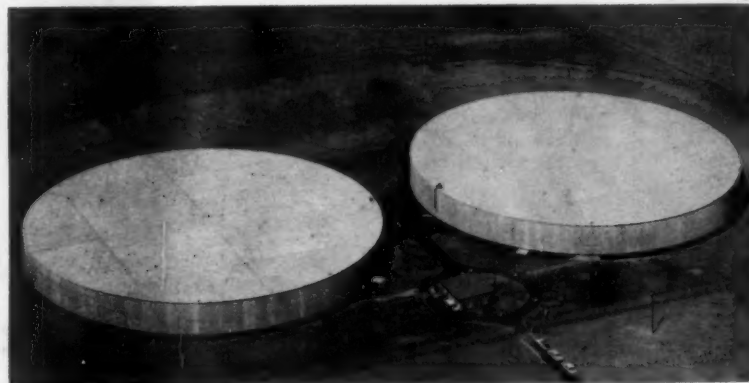
*Made with Barite Aggregates* reports the results of tests performed on barite (barium sulfate) to determine its physical properties and its potential value as an aggregate in conventional and prepacked concrete where high density is desired. The concretes developed were tested under a variety of conditions to determine their physical, chemical, and structural characteristics.

*Magnetite Iron Ore Concrete for Nuclear Shielding* compares the physical properties and costs of magnetite ore concrete to those of other concretes. The methods used in fabricating shielding block are described and recommendations for producing a low cost, relatively high density shielding concrete are made.

*Proportioning of Mixes for Steel Coarse Aggregate and Limonite and Magnetite Matrix Heavy Concretes* offers data on heavy structural concrete, utilizing limonite and magnetite ores as fine aggregates and graded steel scrap as coarse aggregate. Criteria are presented for proportioning a concrete mix for specific unit weight as well as a specific compressive strength.

## Eastern City Builds Big Prestressed Tanks

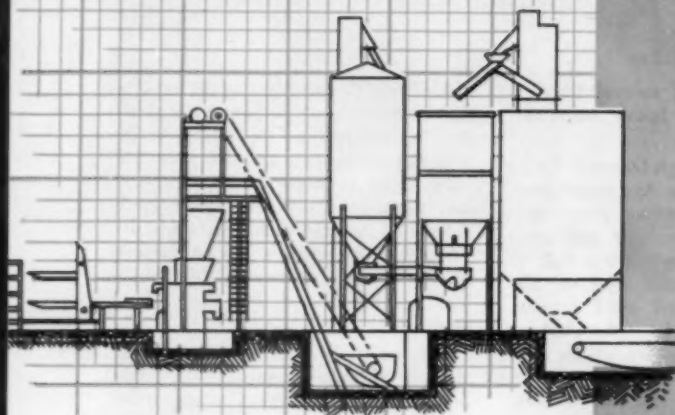
These two huge tanks, each 292 feet in diameter, can "flex their muscles" any time weather or water-content demands. The concrete walls were prestressed during construction to withstand extreme expansion and contraction caused by temperature and water-volume changes. As a further protection against such damage, the wall and floor of each tank were poured as an integral unit not anchored to the rubber base on which the tank rests. The roof, which lies on the circular wall like a flat lid, is supported by concrete columns. Prestressing of this one and one-third million dollar project was accomplished by wrapping the walls with wire during construction. After pouring



the wall, wire under tension was wound around the shell, thus multiplying many times the stress-factor of unreinforced concrete. Finally a one inch coating was sprayed over

the wire to protect it from the elements. Recently completed, this pair of tanks stores 27 million gallons of filtered water for the city of Reading, Pa.

# PLAN NOW for PROFITS!



FROM BLOCK MACHINE TO COMPLETE PLANT, as shown above, Columbia equipment is designed for expansion—to allow you to easily match the growth of the concrete block industry at lowest possible cost.



BLOCK SPLITTERS



MAGNETIC RETURN



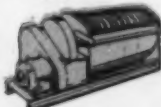
3-BLOCK



2 1/2-BLOCK



2-BLOCK



BATCH MIXERS

**COLUMBIA'S COMPLETE LINE OF PLANT EQUIPMENT** is designed today to meet tomorrow's production needs. And, the far-sighted plant operator who invests today in new equipment or plant expansion gains the advantage of today's labor and steel prices—bound to rise in future years.

In addition to the block plant components illustrated, Columbia manufactures and distributes the following equipment and supplies:

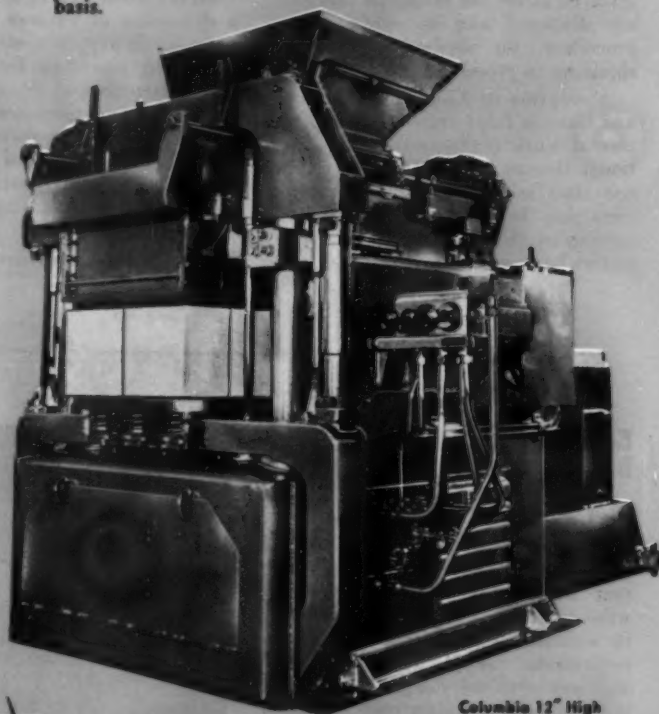
- AUTOMATIC LOADERS and UNLOADERS
- BATCHING EQUIPMENT
- CEMENT SILOS
- AGGREGATE BINS
- SKIP HOISTS
- TURNABLES, single or with double revolving platforms
- RACKS and PALLETS
- BLOCK SPLITTERS, hand, semi or fully automatic
- CLUSTER SPLITTERS
- BLOCK SLUMPERS
- STANDARD and SPECIALIZED MOLDS
- STANDARD and MAGNETIC OFFBEARERS
- CLEANERS and OILERS
- POWER and GRAVITY ROLLWAYS
- HYDRAULIC PUMPING UNITS
- BATCH MIXERS from 12 1/2 to 81 cu. ft. capacities
- MOISTURE METERS
- TRUCK UNLOADERS
- C-202 PLASTICIZERS
- LIFT TRUCKS

Let *Columbia* show you how to make more money during the coming building boom!

Columbia's engineering department with its record of advancement in the concrete masonry industry stands ready to help you prepare for this rising business trend. Columbia's lower cost, hydraulically powered and electronically controlled block plant machinery has been a dominant factor in influencing the rapidly expanding acceptance of concrete unit masonry by architects and builders everywhere. And, the universal acceptance of Columbia's space saving, easily adaptable design by hundreds of plants, stands as further proof of its ability to provide you with sound council when you plan for the future.

## IT'S EASY TO OWN COLUMBIA EQUIPMENT

The low original price represents an easily amortized capital investment. Flexible pay-as-you-depreciate plan makes you the owner of this profitable equipment on an easy-to-pay basis.



Columbia 12" High



There's no obligation when you use Columbia's Engineering Service. Wire, write or phone today!

# Columbia MACHINE

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FACTORY BRANCH AND WAREHOUSE: MATTOON, ILLINOIS  
PARTS DEPOT AND OFFICE: BURBANK, CALIFORNIA

MANUFACTURERS AND WORLD WIDE DISTRIBUTORS OF A COMPLETE LINE OF PLANT EQUIPMENT FOR PRODUCTION OF CONCRETE PRODUCTS





● Florida Concrete and Products Association's new officers are (left to right): secretary-treasurer, J. W. Taylor, Capitol Concrete Co.; president, E. S. Killgore, Pinellas Concrete Products Co.; and first vice president, Kenneth Hill, Kissan Builders Supply. Second vice president Charles Poe is not pictured.



● Newly elected directors of the Florida Concrete and Products Association, each to serve until 1961, are (left to right): Ernest S. Killgore (Association president), Pinellas Concrete Products Co.; Charles Denny, Denny Concrete Products Co.; Bill Owen, Owen Brothers Concrete Co.; Ashton Gray, Duraconcrete Inc., and Louis Schilling, I. E. Schilling Co.

## Calendar...

1958

<b>SEPTEMBER</b> 21-25	Prestressed Concrete Institute — 4th Annual Convention — Edgewater Beach Hotel, Chicago, Ill.
<b>OCTOBER</b> 3-4	Florida Concrete and Products Association — Fall Program for Management — Colonial Inn, St. Petersburg Beach, Florida.
<b>OCTOBER</b> 12-14	Texas Concrete Masonry Association — Fall Meeting — Carlton Hotel, Tyler, Texas.
<b>OCTOBER</b> 13-17	American Society of Civil Engineers — National Convention — Hotel Statler, New York, N.Y.
<b>OCTOBER</b> 16-17	Western Concrete Pipe Association — Fall Meeting — Holiday Hotel, Reno, Nevada.
<b>OCTOBER</b> 16-19	Empire State Sand, Gravel & Ready Mix Association — Fall Conference — The Concord, Kiamasha Lake, N. Y.
<b>OCTOBER</b> 23-24	New York State Concrete Masonry Association — Annual Meeting — Hotel Roosevelt, New York, N.Y.
<b>NOVEMBER</b> 23-25	Southeastern Concrete Masonry Association — 15th Annual Regional Meeting — Carillon Hotel, Miami Beach, Florida.

## Florida Association To Have Associate Members

By-laws of the Florida Concrete and Products Association have been changed to permit the acceptance of associate members. This was done by unanimous vote at the Association's annual meeting in Ft. Lauderdale recently. Annual dues for associate members will be \$500. At the same meeting it was announced that a technical director will be employed. The Technical Director will be responsible for launching a research and development program for new products in cooperation with engineering departments of the University of Miami and the University of Florida. It is also planned to broaden program of short courses in concrete which have been conducted in recent years and also to issue a monthly bulletin explaining technical advances in uses of concrete.

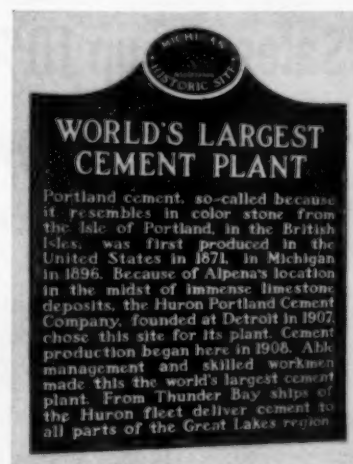
## Say Ready Mix and Block Use Big Share of Cement

Ready mix plants and the block industry in Florida together used from 60 to 65 per cent of the portland cement consumed in Florida in 1957. Those figures are included in a release issued by the Florida Concrete and Products Association. Not less than 227 million  $8 \times 8 \times 16$ -in. equivalents were made in Florida in 1957 the Association says, and estimates the value of this block production at \$41 million. Ready mix production in Florida, the Association says, was approximately 4 million

cubic yards in 1957, estimated to be worth \$56 million. And the 1957 consumption of portland cement in the state is reported as 13,532,000 barrels.

## Historical Marker For Largest Cement Plant

Huron Portland Cement Co., co-operating with the Michigan Historical Commission, dedicated an historical marker at the site of its Al-



pena, Mich., mill on Tuesday, July 29. Purpose of the marker, according to George S. May, historic sites specialist of the Michigan Historical Commission, is to recognize the existence of the world's largest cement plant and the contributions of the company to the growth and progress of Michigan during the past 50 years.



## **"Sales are up 10%! We've added a whole new business with the newer types of concrete masonry!"**

*Says CECIL HEMSTOCK, President of Hemstock Bros. Concrete Masonry Products, Inc., La Crosse, Wis.*

**"There's real volume in the housing field with this modern concrete masonry—our sales show that! We've had to enlarge our facilities to meet demands. And with the higher profit margin on these units, every sale is extra profitable."**

Across the country, aggressive concrete masonry manufacturers are getting a growing share of the housing market with the newer types of product.

New shapes, textures, colors, patterns of laying, are stimulating a whole new interest in concrete

masonry for exteriors—and interiors. Suited to any house style, any neighborhood, these masonry units win acceptance from architects, builders, financing agencies, as well as home buyers.

As so many business-seeking manufacturers have found, there's real profit opportunity with concrete masonry that fits America's modern living ideas—with today's new-type *living concrete*.



### **PORTLAND CEMENT ASSOCIATION**

*A national organization to improve and extend the uses of concrete*

## Develop New Type Of Lightweight Concrete

Three Detroit businessmen have formed a corporation to manufacture a new kind of concrete. It is claimed that the new product is so light it will float, so versatile it can be sawed or nailed, so strong it can be used for a roof, and so economical to produce that it can save up to 10 per cent over cost of comparable construction. The product, called "Betocel", is based on a secret formula developed by a Belgian technician and exported to this country by a subsidiary of Borg-Warner Corp. Betocel is made of cement, sand and water by the secret formula. It is to be manufactured by the newly organized Foamcrete, Inc. and will be sold throughout Michigan by Panel Engineering Corp.

Trevor Hall, vice president of Panel Engineering is secretary-treasurer of the new Foamcrete, Inc. John R. Strang of Birmingham, Mich. is president and Wilburn H. F. Saia of Royal Oak is vice president. Mr. Hall said that Betocel, which resembles a malted milk shake when it first comes from the special mixing machine, will not transmit flame, is impervious to moisture, absorbs sounds, and is light in weight, as low as 20 pounds per cubic foot. Mr. Hall said the product may be used for concrete panels up to 8 x 25 ft. for exterior or interior walls. Because of its insulating value it is said to be suitable for roof decks, floor slabs and slab-on-ground construction. About 72,000 sq. ft. of the new material is to be used for the roof deck in a new junior high school at Utica, Mich., designed by Smith & Smith, architects of Royal Oak and Iron Mountain, Mich. It

will also be used for 3,000 sq. ft. of precast wall panels. Architect Smith believes the new type of concrete has a potential market of about one million square feet annually in Michigan alone.

Betocel, the manufacturer says, weighs from 20 to 75 pounds per cubic foot depending on design requirements. This, he says, is less than half the weight of conventional precast concrete.

■

## Report Growing Interest In Prestressed Concrete

There is rapidly growing interest in prestressed concrete on the part of the construction industry in the Northwest, according to Norman L. Donatt, manager of the Prestressed



division of Graystone, Inc. He bases this belief on comments of recent visitors to the new prestressing plant of Graystone at Redmond, Wash.

In addition to a number of individual tours conducted since the plant started production in April,

an open house held by Graystone June 21 attracted some 200 engineers and architects from the Western Washington area, Donatt reports. Among visitors at the all-day open house were representatives from the Washington State Highway department, the U.S. Navy, the U.S. Army Corps of Engineers, the Seattle Engineering department and the Port of Seattle.

Together with viewing operation of the plant, the group was briefed on latest prestressed concrete developments by Harold Price, San Francisco representative for the Freyssinet Co., internationally-recognized consultants in the prestressed concrete field. Graystone holds the Washington State Freyssinet affiliation for engineering and design consultation. Mr. Price, who is a vice-president of the Prestressed Concrete Institute, recently returned from an international conclave of prestressed concrete industries and designers held in Berlin.

■

## ACI Brings Concrete Primer Up-to-Date

The American Concrete Institute announces that its Concrete Primer, first published in 1928, is being revised and expanded to 72 pages. This permits the inclusion of latest advances in concrete technology. The pocket size of the book is retained, as is the question and answer form. The Primer develops in simple, concise terms the principles influencing concrete mixtures, and shows how a knowledge of these principles can be applied to the production of perma-



● Walter Underwood (back to camera) faces vice presidents and directors of NCMA at the July mid-year meeting.



At Sarasota, Fla., this H-5 uses its precision control and telescoping boom to spot a 40-ft. prestressed double-tee roof slab. Handling the other end of the slab is an H-3, its boom showing in the background.

To give you a money-makin' edge . . .

## H-5 Hydrocranes Pinch Pennies Coming . . . Placing . . . Going

You pinch pennies right from the start with Bucyrus-Erie's all-hydraulic H-5 Hydrocrane. This 12-ton crane mounts on a low-cost new or used standard commercial motor truck. Job-to-job travel costs less, too, with the H-5's nimbleness in traffic and open road speeds up to 50 mph. Less than 35-ft. overall length lets the H-5 travel without a special permit.

At the job, the compact H-5 lets you get into a good operating position easily. Then, four hydraulic outriggers are power-set in seconds to form a stable, level work base. You spend more time making money, less time getting ready.

Job done, you lift the outriggers and nest the telescoping boom over the cab in seconds and are on your way. You get in a lot of jobs every day — squeeze in extra profits.

Your Bucyrus-Erie distributor wants to show you *all* the H-5's money-making edges . . . and those of the 5-ton H-3 Hydrocranes, too — on your jobs.

### Other Hydrocrane money-makin' edges

- telescoping boom reaches in and out, over and under
- precise, smooth hydraulic control and power
- short tail swing for close-quarter jobs



274H58

**Over 50% of Hydrocranes sold last year were repeat sales**

BUCYRUS-ERIE COMPANY • SOUTH MILWAUKEE, WISCONSIN

nent structures in concrete. The ACI announcement points out that over the past quarter century, there have been vast improvements in the machinery and devices for the preparation of materials, accurate proportioning of ingredients, and the transportation, consolidation, and protection of concrete. With the single exception of the addition of controlled amounts of entrained air, the fundamentals of making durable concrete have remained unaltered.

The comprehensive additions to the Concrete Primer are those which take into account the concept of air entrainment, the recognition of reactive aggregates, the use of several cement types, and high-frequency vibration in the placing of fresh concrete. Major emphasis, as in the earlier edition, is given to the basic principles and logical procedures for the proportioning of concrete mixtures. The progress of technology is reflected in the expanded section on mixing time, covering transit mixing and new mixer designs. Questions and answers regarding tests and records have been increased considerably to include sonoscope, rebound, and indentation tests.

Since the original edition in 1928, the Concrete Primer has gone through a dozen printings with 85,000 English-printed copies being sold. Countless other copies of this long-popular handbook have been reproduced by special permission in Russian, Portuguese, Spanish, Scandinavian, and other languages.

### N.C. Concrete Masonry Body Names Secretary

Appointment of Clay Williams of Raleigh as executive secretary of the North Carolina Concrete Masonry Association has been announced by President G. S. Sinnicks of Charlotte. For the past three years, Williams has served as public relations officer for the First-Citizens Bank and Trust Company in Raleigh. Previously, he was in television and radio work.

Mr. Williams served four years in the Navy during World War II. He has been active in civic affairs, and last year won a Jaycee award as one of the 10 outstanding young men of Raleigh. Mr. Williams assumed his new duties July 1. He succeeds William Duff, who resigned to enter other work.

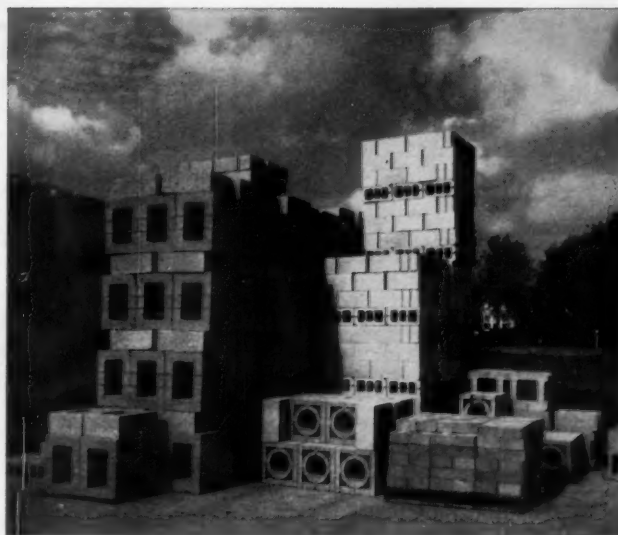


*You're wrong, Mark Twain, with your "Everybody talks about the weather, but..."*

## Concrete producers DO something about low temperatures when they treat with COLUMBIA CALCIUM CHLORIDE

### THEY MAKE CONCRETE PRODUCTS SET FASTER

And make more profit on them. Mark that, Mark Twain. That's because they get days-shorter curing on pre-cast units, blocks, pipe. Columbia Calcium Chloride *actually* works most noticeably when temperatures *drop*. Pre-steam holding time, steaming and soaking periods can all be safely reduced. There's less cracking during early handling, and ultimate strengths test higher, too. Producers save on inventory costs, yet make earlier deliveries. Are you specifying Columbia Calcium Chloride in your various mixes?



### THEY MAKE READY MIX THAT SETS FASTER

No need to mention what this means to contractor-customer job costs. Strength specs can be met days sooner, forms pulled for other jobs, finishers moved in and off without profit-killing overtime. Columbia Calcium Chloride gives both initial and final set a full *three times faster!* Contractors sleep a lot better these cool fall nights . . . wake up to give the next order to the supplier who adds protective, job-bettering Columbia Calcium Chloride to ready mix. Have *you* been getting their business? Columbia Calcium Chloride could clinch your sale.



**WRITE TODAY FOR COMPLETE INFORMATION . . . PLEASE MENTION WHETHER INTERESTED IN CONCRETE PRODUCTS OR READY MIX**

### COLUMBIA-SOUTHERN CHEMICAL CORPORATION

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DISTRICT OFFICES Cincinnati, Charlotte, Chicago, Cleveland, Boston, New York, St. Louis, Minneapolis, New Orleans, Dallas, Houston, Pittsburgh Philadelphia, San Francisco IN CANADA Standard Chemical Limited



## Precast Concrete Panels Used On Maytag Building

Construction work on a new headquarters building for the Maytag Co., at Newton, Iowa, was started the latter part of June. When completed in about 18 months, the building, to contain 132,000 sq. ft. of floor space, will be four times the size of the present Maytag main office which is to be incorporated in the new structure. The new building will be faced with two-story high precast concrete panels with an exposed aggregate finish. The pattern on the decorative, buff-colored panels is an original sculpture designed for the building by a Los Angeles artist. The structure will be trimmed in Italian mosaic tile with a transparent bronze cast. Vertical tile strips containing slot windows will separate the panels at intervals for decorative effect.

General contractor is Arthur H. Neumann & Bros., Des Moines. The architect is Brooks-Borg, Des Moines. The three-floor building will have its main entrance facing the entrance to the research building across the street. A cantilevered canopy will extend beyond the entrance, angling up from wing walls framing the doorway.

## The Advanced Simplified Plain Pallet **KENTWIN**

Produces 2 blocks or equivalent per cycle at prices that meet competition and yield a good profit.

It is scientifically designed and ruggedly built to give top performance for many years with low costs for labor, power, and maintenance.

Electric, hydraulic and mechanical automation units combine to give efficient performance and low cost of operation.

Dependable, rapid, automatic operation minimizes labor cost. Once started by pushing a button the KENTWIN runs automatically. The only labor required is that of the offbearer. And his work is simplified by the front pallet return.



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## Coplay Cement Plans Extensive Improvements

The Allentown, Pa. Morning Call of June 12 reported that officers of Coplay Cement Manufacturing Co. had announced plans for a \$500,000 plant modernization program. The newspaper quoted Coplay executives to the effect that the program includes modernization of kilns next winter. Of the total expenditure planned, \$200,000 has been set aside for dust collection facilities.

The company's announcement said: "The present expenditure for dust collection equipment is the current phase of the company's long-range plans for modernization and dust control which have been under study for several years. Tests are still in progress with a high efficiency mechanical collector of advanced type. Over \$75,000 was spent for dust collection equipment in the past year as part of the company's dust-arresting program."

The Coplay Co. is reputed to be the oldest American producer of portland cement. The present plant has been operated since 1902.

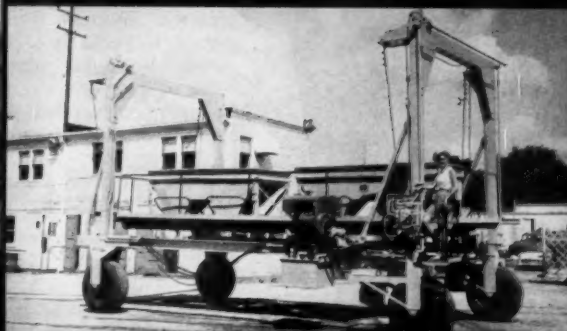
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Travelift offers the fastest, safest method of loading girders.

\* Equip your plant with the most modern and versatile equipment available. Use Travelift to pull strand, set forms, pour forms, clear beds and store finished product.

A new concept in materials handling problems used by most prestressed plants in the Midwest.



Travelift can be custom built to meet your existing plant requirements.

For complete information, write to  
Travelift & Engineering, Inc.  
Sturgeon Bay, Wisconsin.

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## Whitest ... BY ANY STANDARD

*Whitest in the bag*  
*Whitest in the mix*  
*Whitest in the completed job*



There are so many places where it is better to use Trinity White. It is a true portland cement with the "greys" and "off-color casts" eliminated. Use it for architectural units; stucco; terrazzo; or any other job where appearance is important in good concrete. If your dealer does not carry Trinity White, write us direct.

A product of GENERAL PORTLAND CEMENT CO.  
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## Trinity White

PORTLAND CEMENT

As white  as snow

## LOW COST!

SPECIALLY DEVELOPED  
TO SAVE YOU MONEY!



## USE ON ALL METAL SURFACES!

- Mold Boxes
- Skip Hoists
- Conveyors
- Hoppers
- Pallets

## Forrer's ECONOMY RELEASE OIL

(A Parting Solution)

Cuts your clean-up time by 50%. It forms a transparent, non-hardening film on exposed metal parts which prevents concrete from bonding to metal. Especially useful on metal pallets, hoppers, mold boxes, skip hoists, conveyors, etc. No chisels or air hammers needed — simply clean up with brush and scraper.

### EASY TO USE:

Brush or spray on clean metal surfaces at start in morning. Later, at close of day, scrape to loosen built-up concrete, then brush for complete removal of all particles.

Order Forrer's NEW ECONOMY RELEASE OIL, NOW!  
The parting solution made to SAVE you money!

LOW  
ECONOMY  
PRICE!

**\$39<sup>75</sup>**

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PACKED IN  
50-GAL. DRUMS, ONLY

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Division of SPRAY-O-BOND Co.  
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## FORRER'S STAR PRODUCTS FOR MASONRY

- ★ X-L 100  
Powered concrete plasticizer
- ★ Klean-Mix  
Eliminates "build up" on hoppers and mixers
- ★ Hydro-check®  
The perfect fast-setting, patching cement
- ★ For-Air  
Concentrated air entraining agent
- ★ Integral Waterproofing Paste  
Cuts concrete water absorption

National Sales Representatives for:

## RAMSEY PRODUCTS

- ★ A.B.C. Automatic Batching Controls.  
Completely automatic weighing, mixing and handling.
- ★ Sand Moisture Probe.  
Measures sand moisture content
- ★ Moisture Meter.  
Regulates water in concrete mix automatically
- ★ Calcium Chloride Dispenser  
Automatic Batching Control

**Forrer's**  
PRODUCTS FOR MASONRY  
SINCE 1918

## Lightest-Weight Bulk Body on the Road!

for all the **BIG** Jobs

## BAUGHMAN BULKMOBILE

34' STEEL BODY WEIGHS JUST 13,260 LBS. . . . a complete semi-trailer unit ready to roll. Same length Bulkmobile body fabricated in aluminum weighs only 8700 lbs. Other body lengths have proportionately same weights.

**Lighter-weight body means greater carrying capacity!**

- Choice of three drives — auxiliary engine hydraulic, mechanical or PTO hydraulic.
- Choice of two conveyors — drag chain or belt.
- Choice of four methods of rear discharge — belt conveyor, screw conveyor, belt-and-bucket elevator, or distributor.

WRITE today for illustrated Bulletin A-399.

No other BIG LOAD bulk body offers so much, yet weighs so little.

- Capacity from 336 cu. ft. to 972 cu. ft. (with even larger body sizes on special order).
- Discharge rate of 1 to 2 tons per minute, depending on material.
- Entire body completely compartmented at 4' intervals, with trip door for each compartment that is controlled by driver from side of body.

Service and parts from 200 service branches.  
Better service through better engineering.



**BAUGHMAN MANUFACTURING CO.**

141 ARCH STREET

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## NCMA Tells Members Of New Moisture Spec

Members of the National Concrete Masonry Association are being notified by letter of a change in the Corps of Engineers' specifications relating to moisture content limitation. The letter, signed by R. E. Copeland, director of engineering, says the change makes the requirements for the moisture condition of concrete masonry units at the time of delivery less stringent. The revised portion, Section-08 a, of the Corps of Engineers latest "Guide Specification for Military and Civil Works Construction — Masonry," is quoted as follows:

"a. Air-dry condition, for purpose of this specification, is defined as the moisture condition of a concrete masonry unit, concrete brick or split block in a state of equilibrium with a relative humidity of not greater than 15 per cent higher than the average relative humidity at the project site, except that the relative humidity of equilibrium of any unit shall not exceed 85 per cent and shall not be required to be less than 50 per cent in Group I units and 70 per cent in Group II units. The average relative humidity at the project site shall be determined by the nearest U.S. Weather Bureau station from the total of annual observations recorded for the month in which the unit is delivered."

## Urge Uniform Codes To Cut Building Costs

American Standards Association has taken leadership in organizing a general conference of groups concerned with home building to discuss unification of residential building codes. The Association believes that if uniform residential building code requirements were adopted by a majority of American communities, the cost of each new one and two-family house might be reduced by \$1,000 or more. The conference was called for Sept. 10, in New York.

The call for the conference, according to Cyril Ainsworth, deputy managing director of the Standards Association, is a result of a request from magazine publisher Henry R. Luce, on behalf of 14 national organizations concerned with home building.

## Cement Production and Shipments Both Gain

Both production and shipments of finished portland cement increased in May, 1958, as compared with May, 1957, according to a U.S. Bureau of Mines monthly report. The increase in production was 7 per cent to a total of 29,274,000 bbl. for the month. The increase in mill shipments was 5 per cent to a May total of 30,525,000 bbl. Clinker production during May, 1958 totaled 27,574,000 bbl.

The greatest increases in shipments of all types of portland cement were reported to be in the Illinois district with a 63 per cent increase; the Kansas district with a 40 per cent gain, and in the district comprising Western Missouri, Nebraska, Oklahoma and Arkansas where the increase was 38 per cent.

Apparent consumption of portland cement, as indicated by shipments into the various states, was higher in 28 states and the District of Columbia and lower in 20 states as compared with May, 1957.

## COST CONSCIOUS?

### Why not join the swing to ... FRONT ENGINE DRIVE ROCKETS?

FOR MORE ECONOMICAL OPERATION ...



Many ready-mix operators have learned that Front Engine Drive Rockets cost less initially and less to operate give them more profit.

Why your costs go down with Front Engine Drive Rockets: It's a basic engineering principle that as the work load on a single engine increases, so

does efficiency. Friction and wear are minimized in the smooth even flow of power from both ends of engine. Result — less maintenance, less downtime.

Most operators are finding they use less gasoline too, than they would with two engines. For example, one operator reported a minimum savings of \$350 per year.

#### AND EASIER CONTROL...



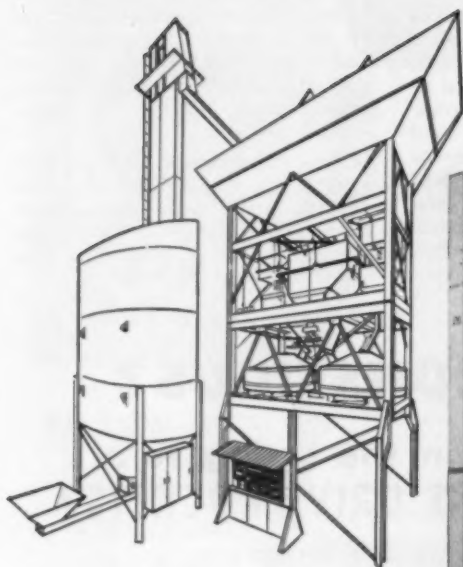
Finger Tip Control in Cab, so your driver can quickly and easily disengage the mixer drive and transfer full power to truck. Positive discharge and accurate chute placement controls are conveniently grouped at rear of mixer.

Write today for more information about this great, extra-feature-loaded mixer value that costs less initially, less to operate, less to maintain.

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## Pre-cast Operators...

**DO YOU BUY  
YOUR CONCRETE?  
...PRODUCE IT?**

*For plus-quality, lower costs,  
be sure it's batched by a*

# BUTLER PLANT

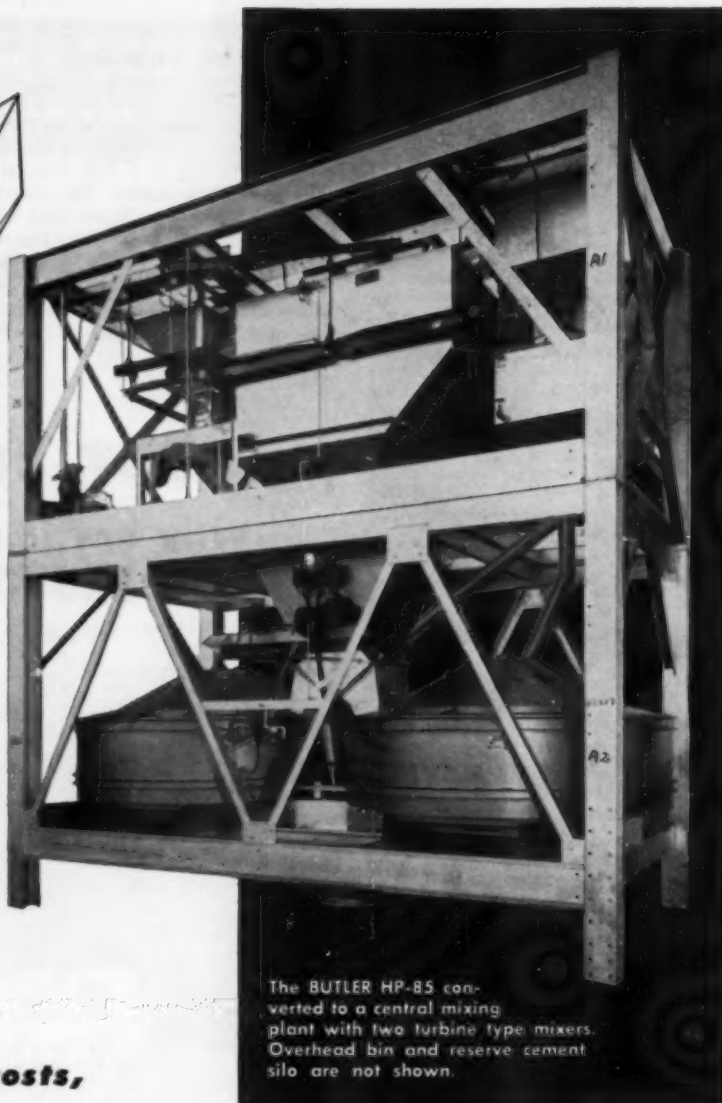
The new BUTLER HP-85 — as a highly portable ready mixed plant, or converted (as in the illustration) to a central mixing plant — is ideal for pre-cast operation.

If your problem involves moving a batching plant to set-up for pre-casting at the job site, the HP-85 saves days of dismantling and erecting time. Literally, in a day and a half you are in operation, because all components, aggregate bin, reserve cement silo, batcher section (with all controls, piping and wiring in-place) ship as units on low-bed trailers or flat car.

As a transit-mix plant the HP-85, with astute aggregate handling, produces 200 yards an hour.

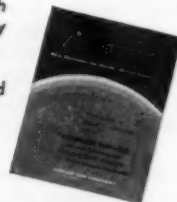
And if used as a central mixing plant with one or two turbine type mixers, your production is 90 or 180 yards an hour of high quality concrete.

So for king size production, the highest portability and top flight quality, be sure your concrete is BUTLER PLANT produced.



The BUTLER HP-85 converted to a central mixing plant with two turbine type mixers. Overhead bin and reserve cement silo are not shown.

Send for this new Bulletin describing the BUTLER HP-85. Profusely illustrated with highly detailed descriptions. Shows why the HP-85 is the most portable, yet provides permanent plant production levels. Just write "HP-85" on a postcard and mail it today.



## BUTLER BIN COMPANY

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## News Announcements from Companies Servicing the Concrete Industries

# MANUFACTURER'S NOTES

Huron Portland Cement Co., Detroit, Mich., has named John B. Ford, III, as treasurer. This action by the board of directors was announced by Paul H. Townsend, president, who has been serving as both chief executive and treasurer since 1953. Mr. Ford had been assistant treasurer since 1955. He was formerly with the National Bank of Detroit.

Cavitex National Advisory Board, Chicago, has named the following six manufacturers of Cavitex masonry units to be members of the Board: W. R. Clarke, Lakelands Concrete Products, Inc., Honeoye Falls, N.Y.; Leo Howard, Rio Hondo Dunstone Co., Inc., Montebello, Calif.; R. A. Buchholtz, Loveland Building Products Co., Loveland, Colo.; W. G. McDonald, Mac's Concrete Building Products Co., Waynesville, Mo.; Alfred Monier, Monier Industries, Springfield, Ill.; John Krause, Riverside Dunbrick Co., Milwaukee.

Food Machinery & Chemical Corporation, Florida Division, has appointed Anthony J. Abruzzo as Form-Crete sales engineer for the northeastern territory. His headquarters will be in Bethpage, L.I. Mr. Abruzzo's territory will include the states of New York, Massachusetts, Rhode Island, Vermont, Connecticut, New Hampshire, and Maine, and Eastern Ontario and Quebec, Canada. He will also cover Long Island and the city of New York.

Hyster Company, Portland, Ore., announces five key personnel changes in its engineering department. These are as follows: A. H. Huebner, to be assistant supervisor on new model design in the industrial truck division; H. C. Harbke is promoted to assistant supervisor on construction machinery in the industrial truck division; J. R. Aaron becomes supervisor of a newly created advance design group; R. A. Johnson is to be general supervisor of the new engineering services division which deals with technical and engineering records and information; Howard Stewart is promoted to staff engineer to report directly to Glenn Herz, chief engineer, on special projects.

The Yale & Towne Manufacturing Co., New York, has selected Charles J. Jacobus as chief engineer for the Trojan shovel line made at the company's plants in Batavia, N.Y., and San Leandro, Calif. For the past five years Mr. Jacobus has been product engineer of the construction machinery division of Clark Equipment Co. Prior to that he was project engineer for the Frank G. Hough Co.

The Concrete Reinforcing Steel Institute, Chicago, is to have Paul F. Rice as assistant to Harry C. Delzell, managing director. Mr. Rice has been technical director of the American Concrete Institute for the past four years. He was also a structural field engineer for the Portland Cement Association in the Detroit area for five years.



J. B. FORD III



A. J. ABRUZZO



P. F. RICE

The Lith-I-Bar Company, Holland, Mich., has appointed William F. Keenan Co., Atlanta, Ga., as its exclusive representative in the states of Alabama and Georgia.

years. In his new position Mr. Smith will have offices in Kansas City, Mo. He will be responsible for traffic and transportation matters in Universal Atlas' western region plants at Duluth, Minn.; Independence, Kansas; Waco, Texas; Hannibal, Mo.; and the division's gypsum operations at Watonga, Okla.

Universal Atlas Cement Division of United States Steel Corp., has promoted George A. Smith to be traffic manager, Western Region. He had been assistant traffic manager in the Chicago office for five

Motorola Communications & Electronics, Inc., sales and service

subsidiary of Motorola, Inc., Chicago, has appointed a new vice president in connection with changes in the sales staff. The new vice president is Robert N. Swift, named to succeed Harold A. Jones, vice president appointed as eastern manager. Mr. Swift has been sales manager, special markets in the midwestern area. He is now to be midwestern manager, the position formerly held by Mr. Jones.

Sherman Products, Inc., Royal Oak, Mich., announces the appointment of John Aldred as chief engineer. For the past six years, Mr. Aldred has been chief engineer of Hills-McCana of Chicago. For seven years until 1952 he was chief designing engineer for A. R. Wilfley & Sons of Denver.

Signode Steel Strapping Company directors, Chicago, have elected J. M. Moon executive vice president. He had previously been vice president in charge of sales and will continue to head the company's sales activities in addition to his new responsibilities.

Allis-Chalmers Mfg. Co., Milwaukee, has named Y. S. Hogg as manager of their Tampa, Fla. district office. He formerly was a sales representative working out of the company's New Orleans district office. The company has also announced that former branch offices in Miami and Jacksonville have been made district offices.

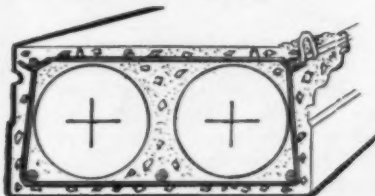
Dewey and Almy Chemical Division, W. R. Grace & Co., Cambridge, Mass. has appointed Hall-Hodges Co., Inc., Norfolk, Va., and Ken-Mar Co., Syracuse, N.Y. as new distributors of chemical specialties to the construction industry. The Hall-Hodge territory will be Virginia and West Virginia. Ken-Mar Co. will have upper New York state.

## put the *STRESS* on **AUTOMATIC**

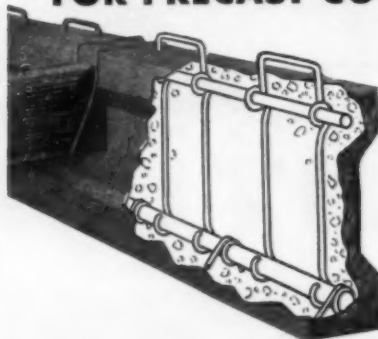
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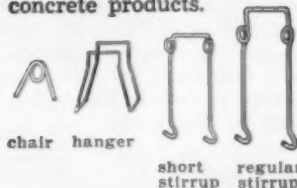


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## THE EDITOR'S PAGE

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DOUGLAS LEE

### Conventions Can Be More Profitable!

As you read this, manufacturers all over the country are busy planning the biggest display ever held of equipment and materials used in concrete products and ready mixed concrete plants. This will be the 11th Biennial Concrete Industries Exposition at Cleveland Public Auditorium, January 12 to 15, 1959, under the sponsorship of the National Concrete Masonry Association and in conjunction with its 39th annual convention.

So that everyone who wishes to attend both events may do so with maximum convenience, NCMA will continue its long-standing policy of holding its general convention sessions in the mornings with the afternoons reserved to the show.

Since the convention and show are unusually early next year, it isn't a bit too soon for you to begin planning now how to participate effectively in both big events. Actually, with the earlier dates it ought to be easier for you to plan to bring more of your people than normally, particularly those responsible for supervision of production in your operation. For this convention NCMA is planning the bulk of its program to be of particular interest to production personnel, especially those in supervisory capacities. Since equipment and materials exhibitors traditionally plan their displays and services to be of maximum benefit to production people as well as top management, this 1959 meeting offers you an unusually fine opportunity to obtain a great deal of operational information and help that can be converted to profits in your business.

We have often felt that companies who send men to conventions and shows could get a great deal more out of these affairs with some advance planning as to how each individual would spend his time. Obviously, no one person can cover everything effectively. Wouldn't it make sense, therefore, for a company that sends three, four, or more men to make an advance study of the convention program and try to assign each man to cover specific events? The same planning could be applied to covering the exhibits. Frequent communication with each other during the week would permit alterations in the original plan that might be indicated. Then, on returning home, a thoroughgoing bull session at which all of the information gathered is discussed and evaluated seems to be the logical concluding step.

In making this suggestion, we are in no way proposing that anyone forego the social side of convention week. This is important and necessary to any convention. Some of the most useful information gathered originates from the social intermingling of the convention delegates. Actually, an advance plan to cover the formal parts of a convention in an orderly fashion can result in allowing more time for impromptu social gatherings, which have a way of getting around quickly to shop talk under any circumstances.



● Two fork trucks with "I" beam attachments work in tandem to heft a 20-ton prestressed bridge deck.

## Fork Trucks Cut Beam Handling Costs



● Here, one fork truck lifts a 10-ton double "T" section.

Careful planning before equipment selection can often result in substantial savings. In the case of Precast Industries, Inc., Kalamazoo, Mich., it meant a savings of a quarter on every dollar spent in handling prestressed concrete beams.

Precast had to decide on one of three types of handling equipment: fork trucks, truck cranes, or overhead cranes.

First, the company determined just what handling jobs would have to be done by the equipment; this included type and weight of sections to be handled and the frequency of handling. Then a dollar-by-dollar

comparison was made between types of available equipment, including the initial costs of each and estimated maintenance expenses.

The final analysis indicated that two fork trucks would do the handling chores at 25 per cent less cost than the cranes.

With this finding as a guide, Precast purchased two Clark CY-180 fork trucks and proceeded to prove the analysis by putting the machines to work on the biggest bridge-deck beams the company had produced. These were prestressed bridge beams, 36 in. wide, 33 in. deep, and 58 ft. long; they weighed 20 tons.

Then, by using various hook attachments, and sometimes working in tandem, the two fork trucks went on to efficiently handle the lifting tasks that accompany the production of 114 prestressed beams from pouring on through to preparing them through shipment.

#### "I" Beam Attachments Help

The fork trucks help with production. First step was placement of steel forms. This was accomplished by fitting one of the trucks with a 20-ft. "I" beam fixed with four sets of double hooks. The truck's forks slipped into channels welded to the underside of the "I" beam. Hooks on the beam lifted the forms when the forks were raised.

With the forms in place on the bed, a 14-ft.-cantilever attachment converted the fork truck into a cable stringer to lay strand in the forms. Then the strand was tensioned by jacks, and ready mixed concrete was poured.

When the concrete had cured, one fork truck, with the 20-ft. "I" beam, stripped the forms and carried them to storage. Then both trucks, working as a team, lifted the heavy concrete beam from the casting bed. For this heavy, tandem work, each truck was fitted with an 8-ft. "I" beam with two sets of hooks. Working at each end of the bridge-deck section and lifting in unison, the Clark trucks carried the beam to storage.

With the original order for 114 sections cast, cured, and delivered, Precast has received other orders. Now, the company's using the same techniques with its two fork trucks to handle production of 10-ton, 36-in.-wide bridge decks and 10-ton double "T" beams. To move the double "T" sections, Precast fabricated a 36-ft. "I" beam attachment for their fork trucks.

When the trucks are not busy handling beams, they're used to unload and store incoming materials, spot semi-trailers in the yard, assist in concrete pouring, and do odd jobs around the plant.

## Southern Concrete Co.



● Gas lines don't extend out as far as Southern Concrete Co.'s plant.

## Heats Its Water with LP-Gas

When you're out in the country and few of the city facilities are available, what do you do? Improvise!

That's about what Southern Concrete Company did. Located far beyond city gas mains, near Edgewater, Md., the company needed a supply of fuel for heating water during winter-time operation.

Like so many of the country residences that are without a gas line coming in, Southern Concrete turned to using the big silver tank for gas supply.

They installed a LP-Gas fired water heater with input capacity of 900,000 B. T. U.'s. Water is heated by a single-port blast-type burner. The hot water, maintained at 140°F., is piped to a 550-gallon storage tank in the aggregate hopper. This keeps the aggregates preheated; and each transit mixer takes on a supply of heated water out of the tank prior to setting out on a cold-weather delivery run to the construction site. The company operates eight truck mixers.

A 500-gallon LP-Gas bulk storage tank provides a convenient and dependable source of fuel for the hot water heater.



● Southern Concrete's hot water for winter-time use comes from this LP-Gas fired heater beside the chute.



● Bulk storage of LP-Gas is in this 500-gallon pressure vessel located on the plant premises.



# Manufacturing Concrete

## What's required to produce and

By GORDON W. SCHMIDT

**W**hen concrete brick is properly manufactured, and marketed with diligence and care, it can become a legitimate, honest, and reliable masonry facing material. Concrete brick can offer the architect, builder, and owner full measure of value in performance and beauty.

In some areas concrete brick has achieved very creditable success in terms of its production and sales-figures share of the total brick market, and in terms of the high quality and appearance of the structures built with concrete brick.

In other areas concrete brick is a failure, measured by the negligible share of the total brick market it occupies, and by its poor performance generally as a masonry facing material.

Why should a product enjoy outstanding success in one area and achieve only indifferent success at most, or even virtual failure, in another area?

The answer probably can be found by examining the two broad functions in a manufacturing enterprise that reflect most upon the success or

failure of the product: manufacturing and marketing. These two functions with respect to concrete brick will be examined here; since concrete face brick is mostly colored this subject matter is not illogical for a series on color in concrete.

It may surprise some readers that concrete brick is regarded as a real factor in the brick business anywhere. To many concrete masonry producers, concrete brick represents only a very small percentage of their total output, and its application is limited to the very prosaic back-up masonry





# Brick

## market them

role. It is true, however, that in some very significant face brick markets concrete brick is currently obtaining from 40 to 60 per cent of the residential face brick volume. This performance is in areas where residential construction is predominantly brick-and-block or brick veneer.

Concrete brick, like virtually all other types of concrete units, is essentially localized; except in unusual circumstances and in sparsely populated areas, the radius of economical shipping is not much greater than that for block.

Not all areas have the factors present that go to make concrete brick a success, even with the best manufacturing techniques and the most aggressive and energetic sales efforts. For example there are many large sections of this vast North American continent where frame construction in housing predominates to the virtual exclusion of masonry. In such cases, unless there is clear evidence of strong desire for masonry construction above grade, entry into the concrete brick field would have limited prospects of success in concrete brick least, would require a substantial effort on the part of the producer.

Similarly, in the great clay-brick areas in Ohio, Pennsylvania, New York, and other states where huge production facilities for brick of the accepted type have been established many years the prospects for success with concrete brick of normal type would be somewhat less than bright, although not impossible.

But there are many areas where the prospects of success in concrete brick production and sales are excellent. Areas that are away from the traditional sources of face brick or areas which show a strong leaning towards, and utilization of, brick masonry are worth considering as suitable for the growth and progress of concrete brick. Also, the new, fast-growing communities, stemming from dynamic and widespread defense and industrial shifts, provide markets well worth investigation in regard to concrete face brick.

These comments have been primarily concerned with the residential building market, but the commercial, industrial, and institutional market should be investigated as part of the total market in any area under consideration. Each of these could offer the producer a substantial outlet.

### Manufacturing

Let us first of all examine production requirements for high quality concrete face brick.

1. Adequate strength to meet the requirements of the applicable building codes and the various agencies involved. This usually means meeting ASTM requirements of 2,500 psi average compressive strength. This strength requirement should be regarded as a rock-bottom minimum, since it is usually desirable to design sturdier brick to enable them to withstand the rigors of shipping and rough handling.

2. Dimensional accuracy is a property for which concrete brick is justly

renowned. With proper manufacturing care there should be no occasion for concrete brick to warp, twist, or deform in any way during their processing. It is important to keep production machinery in good shape and engender in plant personnel the attitudes of conscientious care, which can help considerably to keep edges sharp, corners square, and the face texture uniform.

3. Proper absorption characteristics, while being most vital to the success of concrete brick, very often are misunderstood. As with block there is usually a requirement for a maximum total absorption which is not difficult to meet; and, on occasion, it may be necessary to provide brick with a specified maximum moisture content (expressed as a percentage of total absorption) on delivery.

The rate of absorption (or rate of water penetration or suction) is one very important absorption characteristic which is not a part of the ASTM specification on concrete brick and is rarely if ever specified independently. It is probably no exaggeration to say that the control of the rate of absorption has been as important in the evolution of successful concrete brick as the availability of good coloring materials. Every established and conscientious concrete brick manufacturer has control of the rate of water penetration by the use of so-called "waterproofing" admixtures, and he benefits from the desirable properties imparted to the brick: moderate suction, leading to more weather tight walls; fast dry-off of yard stocks and of units in finished walls after rain exposure; and considerably reduced incidence of efflorescence.

4. Proper curing and aging is one of the manufacturing functions that should receive constant and continuing attention. There is a wealth of information on curing of concrete units available from government and association sources. A continuing search for the most efficient curing methods is most important in the case of facing units.

Yard aging of concrete brick is every bit as important as curing. In order to achieve satisfactory wall performance, dimensions of the units must be stabilized before they are placed in service.

5. Attractive colors and textures are required of concrete face brick no less than for any other building material used in exterior and interior walls. In assessing the performance of a masonry structure, appearance is not the least consideration. The selec-



tion of colors has been discussed at length in previous elements of this series but it is worth emphasizing the importance of keeping colors uniform, fresh and interesting. A large measure of the success of concrete brick is due to fresh color ranges that it offered in place of the limited and sometimes dull shades often associated with ancient row housing and dark structures crowded on small lots. Modern concrete brick, aided by the longer lengths that some types exhibit, and by the lighter pastel shades, have become associated with the long low ranch house in many brick markets.

6. The maintenance of a proper and uniform texture is a part of the manufacturing operation that bears constant vigilance. Since texture is affected by a number of variables including water-cement ratio, aggregates and machine performance, its regulation and control requires both skill and watchfulness on the part of manufacturing personnel. Texture variations can cause apparent color variations which are generally to be avoided.

7. Proper condition upon delivery is a manufacturing responsibility and one that is not to be taken lightly. All of the above conditions of manufacturing may be admirably met; but unless the brick are delivered on the job site in excellent condition, the care and control exercised will have gone for naught. It is on the job site that brick are first critically judged by the builder and mason and, as often as not, the owner! If the brick are carelessly handled by the trucker, resulting in chipped and broken brick, if they are carelessly and sloppily piled, or if they are exposed to mud on the site, then there is the danger that the masons may show the units no more respect in the laying of them than the others did in the delivery, thus compounding the crime of disrespect for the material and resulting in unsatisfactory use.

Since concrete brick should always be laid in a dry state, the manufacturer at the very least must see to it that they are delivered dry.

### Equipment

Concrete brick may be manufactured on several types of equipment, using a variety of compaction principles, aside from the so-called "slump brick" which is sometimes made in forms using a slump mix. All machine-produced concrete brick is produced with no-slump mix (unless, as is occasionally done, slump brick is intentionally made using machine-

ry designed for regular brick).

Compaction may be arranged by the use of straight pressure, a combination of pressure and vibration, by vibration alone (with secondary pressure), or by tamping.

Brick formed by straight pressure consolidation is characterized by the unit produced on the Jackson & Church equipment. The mix is extremely dry; and it is compressed in a chamber by a cam operated plunger with extremely high pressure. Further cam action forces the compressed brick out of the brick-shaped chamber from the bottom, after the removal of the top restraint; and the brick is picked off the machine by hand and stacked on a pallet for curing. The compression chambers, or pockets, are arranged radially in a flat cylinder that rotates on a vertical axis.

This type of brick generally is made with a quite-fine aggregate and is adaptable to sand, crushed stone, or other manufactured aggregates. It is characterized by high density and great compressive strengths for the same cement content, and, because of the dry mix employed, the surface is dry in appearance, lacking a cement paste surface film, or slick. Also, because of the dry mix, certain colors, such as buffs, light pastels, and tans tend to be dark and lack life. However, this aids in the development of deep, strong reds and browns. Because of the very low water-cement ratio, curing is most important. Thorough hydration in the cure must be assured, and surface drying before cure prevented.

This type of straight pressure equipment is not so flexible as other types when it comes to size, since it requires a different cylinder, piston heads, and, sometimes, cam mechanism to change brick size. Regular, Norman and Roman sizes can be produced. Other types of straight pressure machines are available, generally adaptations of clay brick machinery designed for dry-press use and incorporating more or less flexibility.

Brick made on block making equipment, employing vibration or vibration and pressure as a means of compaction, is familiar to most members of the concrete products community. It is made on numerous makes of block machines, but the principle is basically the same as that used to manufacture the larger block shapes and needs no detailed description here. The most salient feature of brick made on this type of equipment is that the units are borne on a plain solid pallet and are left

free standing after vertical stripping.

This type of brick may be made from regular sand aggregate (usually somewhat finer than block aggregate for the sake of surface finish) crushed stone, expanded slag, expanded shale, pumice, or any other material that lends itself to the block machine.

Because the brick is pallet borne, the mix may be somewhat moist as is the concrete for block, and this aids in the development of a certain amount of the desirable slick on the surface and at the same time provides for better development of the lighter colors that cannot be brought out as well by drier mixes. The stripping action that develops the slick, however, is limited to the height of the unit and is not always entirely successful. Care must be taken to avoid an uneven surface slick, caused by the fact that the upper part of the unit is exposed to more "trowelling action" during the stripping than is the lower part. This generally is cured by reducing the water in the mix.

Regular brick sizes are most usually produced on end by the block machine; and this permits a very high production rate, with some machines capable of 32 brick per cycle or more. There are some problems involved in producing the units on end, however. The top end of the brick may come out somewhat rough or with a lip around the edge if the stripper foot is worn. Height control must be carefully controlled to maintain exact brick length. Most serious perhaps is the problem of preventing

"sag" as a result of the stripping action. This may result in untrue brick with a pear shape.

With adequate care, first class face brick may be made vertically on block equipment and is being done so with a high degree of success by many operators. Even 12-in. Norman brick is being produced vertically on 12-in. stroke machines.

If the units produced vertically are to be frogged, then only one solid end is possible since an open end frog is necessary for stripping. It is especially important in this case to maintain clean pallets so that the solid end does not pick up contrasting color or buildup from previous runs.

Many block machinery manufacturers have developed molds for the production of brick "on the flat," primarily for the making of 12-in. or 16-in. units. Naturally, this cuts the productive capacity of the block machine in terms of tonnage per hour compared with the vertical method but permits the manufacturer to provide brick of new and modern length.

Concrete brick machinery employing the tamping principal produces brick or steel pallets which are the length of the brick and accommodate three or four units side by side. The pallets are carried on a continuous chain; each flight of the chain accommodates one pallet between mold ends that are attached to the link pins of the chain. Side plates and dividers, in fixed position, form the sides of

the spaces in which the brick are formed.

As the continuous chain passes under the supply chute, the mix is deposited continuously into the moving molds and on top of the pallets. As each mold moves along, a series of cam operated tamping bars, each set progressively lower, consolidates the material in the moving mold and an oscillating trowel head finishes the top of the brick to close height dimension. The pallets are removed before the chain begins its return to the feed end of the machine.

This method is exemplified by the Dunbrik and Cavitex machines which have been on the market for many years. This type of machinery can tolerate wetter mixes than block machines, and since the brick lie flat on the pallets, there is little stability problem in handling. Many operators prefer to keep the mix just slightly drier than the slump point to develop maximum slick on the faces and to provide a surface with a sheen, which, it is claimed, yields a greater resistance to normal concrete weathering by providing a heavier portland cement paste coating over the surface aggregates. For the production of buffs, light shades and pastels the wetter mix is better.

The tamping and trowelling action produces a dense unit, and the face surfaces of the brick are subjected to a trowelling action, in that they slide along two or more feet of steel divider which again aids in the development of the face slick.





This type of equipment is fairly versatile, allowing 16-in. brick to be produced with little change except in pallet size. And the height of the brick is readily changed as well. But, by the standards of most block machinery, production capacity is low.

Successful concrete brick is being made on all of the above types of equipment, is being sold in good volume, and is competing for a profitable share of the face brick business in many areas.

## Marketing

But manufacturing first class concrete brick that competes price-wise is only half the story. A manufacturing endeavour will be completely profitless until the brick is sold and placed into service. Certainly concrete brick, just as any other building material, must be aggressively and diligently promoted and sold. Long gone are the days when it was only necessary to make concrete brick and wait for materials hungry builders, harrassed by post-war shortages, to beat a path to the office door and bid for the available supply.

Active promotion of concrete brick can build a share of the face brick market, but continuing efforts are necessary to hold and expand it.

Concrete brick will find use as:

1. Exterior facing units which may be
  - (a) load bearing; solid masonry construction with or without back-up block.
  - (b) non-load bearing — veneer construction.
2. Interior facing units.
3. Exterior walk or patio surfaces.
4. Versatile masonry units for use in chimneys, barbecues, fireplace facing, driveway edging, etc., and load bearing structures requiring unit assembly on the job such as man holes, pilasters, etc.

Naturally the biggest market for concrete brick exists in the exterior field, and it is here that most promotion efforts are directed.

Materials competing against concrete brick are headed by the most obvious: other types of brick. Naturally, sales efforts expended toward the displacement of the older types of brick generally brings the most results. It should not be forgotten, however, that concrete brick is forced to compete with many other building materials, including lumber, imitation brick siding, stone, asbestos-cement shingles, aluminum panels and siding, stucco, glass, and other facing materials, including concrete block.

Certainly the regular residential brick market is the primary market for most concrete brick producers. Where masonry construction, either veneer or solid, is very prevalent, this market is more or less buoyant depending on residential building activity. In this field the prime targets are the project builders and developers, and to some degree the prospective home owners. Nor should the real estate and mortgage people be neglected where large housing developments are concerned. Often they are most influential in deciding on the type of materials to be employed, and the concrete brick story must be presented fully to them.

All of these people must be constantly sold on the merits of concrete brick to offset the efforts of the proponents of other materials and other wall systems. They must be sold on the merits of your concrete brick in particular, backed up, naturally, with high quality standards and good service. Those involved with placing the material in the wall constantly should be informed of the best procedures to be followed with concrete brick. The masonry contractor also must be sold and kept fully informed, as his work, if unsatisfactory, due to misunderstanding or through lack of information on concrete brick, can either make or break the reputation of the brick and can either reinforce or cancel out much of the creative sales effort expended at other levels.

In areas which are predisposed to frame construction, considerably more creative sales work and missionary work must be done among builders and project developers. The legitimate advantage of masonry construction in general, and concrete brick construction in particular, should be meticulously marshalled and presented with diligence. Many advantages can be emphasized: paint free maintenance, structural strength, vastly improved value retention, fire resistance, and improved saleability. These can be extolled constantly and positively.

The manufacturer of concrete brick also incurs the responsibility of informing his prospects of the limitations of his product. This is not something to be ashamed of, since all materials have inherent limitations, and the forthright explanation of them can only increase the manufacturer's stature. A reasoned explanation of the mortar characteristics and the necessity of provisions required for reinforcement over openings and control jointing where applicable will not emphasize short-

comings of the material. Rather these explanations will help prevent possible failures which could damage the reputation of the material.

The promotion of brick for residential and commercial interiors should not be overlooked. In addition to the actual volume resulting from such application, interior installations add considerable prestige to the reputation of concrete brick. Ranch house and split level designs provide many wall areas which may be glamorously treated with concrete brick, especially the longer lengths. Virtually every issue of the slick, home and living magazines shows applications of brick in glamorous interiors.

The above remarks apply primarily to the residential market where many manufacturers find the bulk of their market. The commercial, industrial, and institutional markets, while demanding a much more sophisticated approach and more careful promotion, can yield large volume and important prestige for concrete brick. Even in the areas where concrete brick has been most successful, the commercial market often hardly has been scratched.

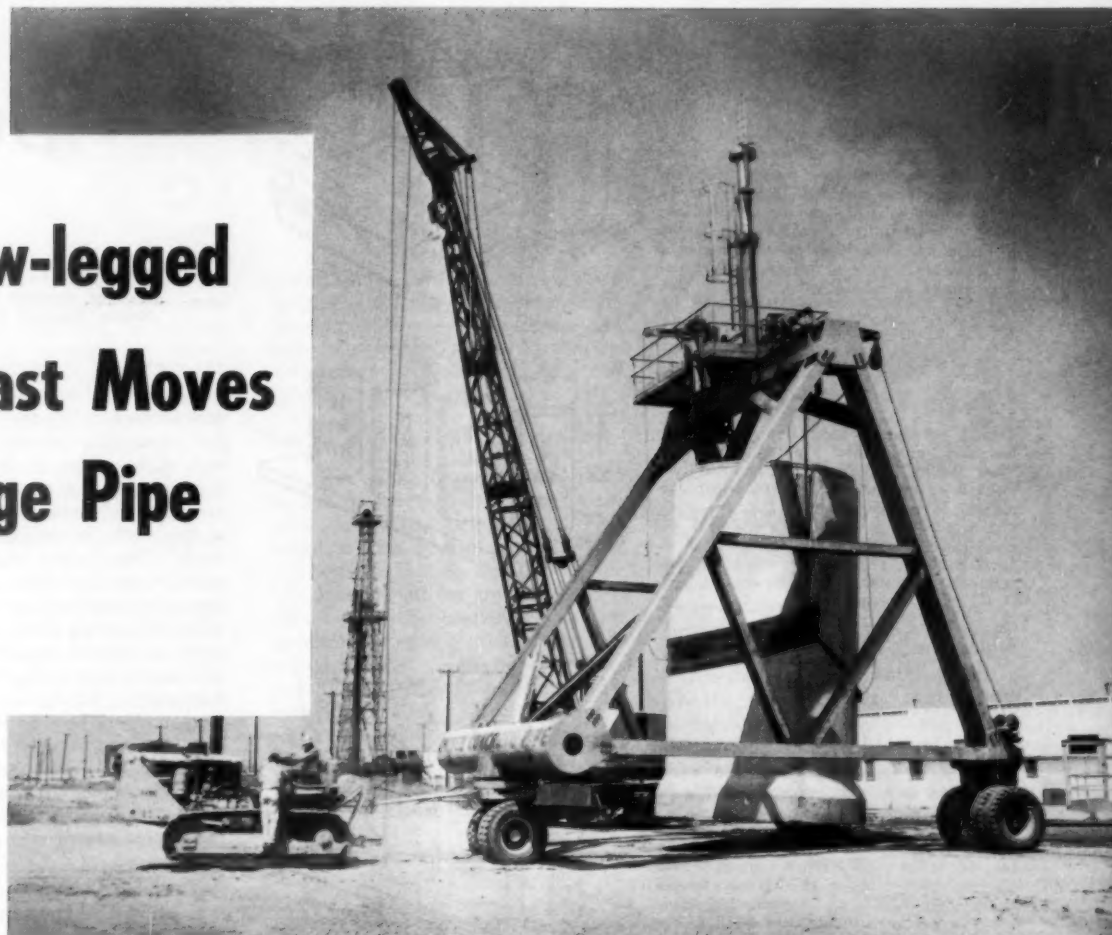
However, it is not enough to present programs with only vague indications of savings and only half thought through details of techniques. Architects and engineers have rightly come to expect the most explicitly detailed information when they are presented with a building material. Concrete brick is no exception. Realistic cost information must be presented, and where concrete brick requires consideration and techniques which are different from those accorded to other types of brick, then these should be outlined clearly and frankly.

In both the regular housing, and the non-residential brick markets, concrete brick has many sales worthy advantages. None can be neglected in a well directed program to develop concrete brick: dimensional stability, wide color range, wide size range, superior resistance to efflorescence and frost action, resistance to airborne dirt penetration, freedom from warp, and ease of laying.

The combination of quality concrete brick with attractive color, texture, and size range, plus a well-planned and conscientiously-executed sales program can achieve volume and substantial profits. It will undoubtedly take time to develop the production and markets, but it has been done and it is being done. Concrete brick is here to stay.



# Bow-legged Beast Moves Huge Pipe



This 90 ton pipe handler, designed and built by United Concrete Pipe Corporation to handle 85 ton, 144 inch i.d., 24 foot long pipe sections, is put to use at United's Long Beach Harbor, Calif., plant. The huge pipe will be laid on the ocean bottom as part of the new \$20,000,000 effluent outfall now under construction for the Los Angeles Hyperion Treatment Plant.

The handler is 50 ft. high, 32 ft. wide, 35 ft. long, and weighs 30 tons. The operator's platform, 35 feet above the ground, holds the hydraulic hoist and Vickers hydraulic pump with a 75 h.p. Ford engine as a power source. The hoist has an 8-ft. stroke, 12-in. bore, and is designed for a maximum load of 150 tons. A 2-in. endless cable is used to

lift the pipe and to support it during transportation. Five hydraulic winches control the lifting band as well as other control cables. The handler has 12 rubber-tired wheels with a maximum loading of 10,000 pounds each. Motive power is provided by the tractor which has a 2-way telephonic connection with the operator's platform.

This combination lifts completed pipe from the base rings, transports it to the storage area, and from there to an ocean launching platform. Here, eight joints of pipe are joined into 192 foot lengths to be towed, supported by a pontoon, to the point of laying at sea. Various controls on the pipe handler permit turning the pipe to a horizontal or vertical position as required.

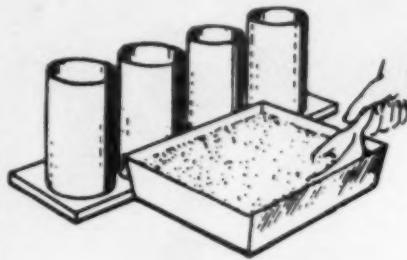
United Concrete Pipe will handle approximately 24,000 feet of 24 foot length pipe in this manner at its Long Beach Harbor plant. Approximately 11,400 feet of additional pipe is being manufactured at United's Baldwin Park plant and delivered by truck — 3,500 feet of 144 inch i.d. pipe to the beach jobsite to be laid from a trestle and 7,900 feet of 102 inch and 72 inch i.d. pipe to Long Beach to be towed to sea.

The Hyperion Treatment Plant effluent outfall is being constructed for the Los Angeles Board of Public Works by Hyperion Constructors, a joint venture of De Long Corp., Healy Tibbitts Construction Co., Peter Kiewit Sons' Co., Macco Corp., Raymond Concrete Pile Co., and Tavares Construction Co.

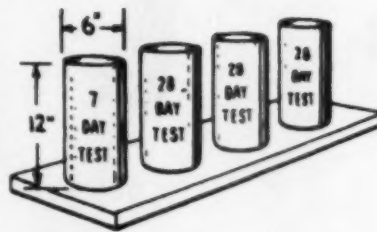
# "Below

**By Alvin T. Klassen**  
 Manager, Ontario Division,  
 Master Builders Co., Ltd.

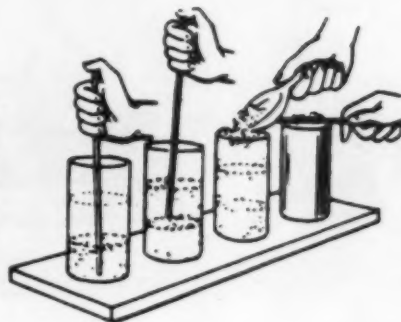
**Use only non-absorptive molds:** Steel, or paraffined paper molds, 6" in diameter by 12" long, with base plates or bottoms, are used for casting concrete cylinders in the field. Before filling, they should be placed on a smooth, firm level surface. Three cylinders should be made for the 28-day test.



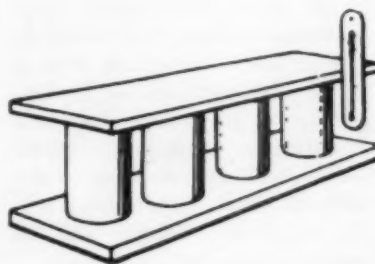
**Take 3 part sample:** A sample should be obtained from at least 3 parts of the load. They should be taken directly from the truck or mixer discharge at well distributed points. Before filling the molds, the individual portions of the sample should be combined and thoroughly re-mixed in a large flat pan or on a clean non-absorptive surface.



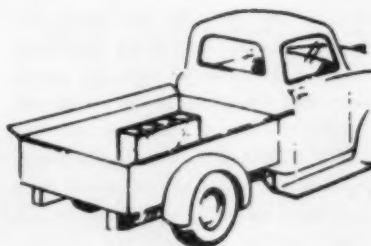
**Fill molds in 3 layers and rod each layer 25 times:** Molds should be filled in 3 equal layers, and each layer rodded uniformly 25 times with a 5/8" diameter rod with a 5/8" hemispherical tip. When rodding upper layers, the rod should just break through into the layer underneath. All molds should be filled uniformly — that is, place and rod the bottom layer in all, then the 2nd layer, etc. The 3rd layer should contain an excess which can be struck off smooth and level after rodding.



**Let cylinders set for 24 hours at a temperature between 60° and 80°:** Cylinders should be left undisturbed until 24 hours after casting. Tops should be covered to prevent loss of moisture and the temperature should be between 60 and 80 degrees. Cylinders left on the job for several days at low temperatures will give non-standard results.



**Cure and handle cylinders with care:** After hardening, cylinders should be stored in a moist condition at a temperature of 65 - 75 degrees or sent to a laboratory for similar standard curing. Careful handling during moving is necessary since cylinders which are allowed to rattle around in a box, or the back of a car, or pick-up, can suffer considerable damage, particularly at these early ages.



IT CAN BE STATED that every architect has suffered concern and embarrassment by the report of "below strength" concrete on at least one of his jobs. If the concrete in question is in a particularly critical area, the job must be held up until a thorough investigation has been made. The "below strength" report starts a chain of time-consuming letters, telephone calls and meetings but when the smoke blows away, the concrete in place is usually found to be well above the specified strength. Unfortunately, during the "smoke" period, tempers become short and relations strained between those involved. Much of this unnecessary irritation could be reduced if not eliminated if there was proper understanding of the importance of correct testing procedure.

To immediately assume that a "below strength" report means that the concrete involved is sub-standard is not only erroneous, it is also extremely unfair to the producer. Even if ethics were not involved, the responsible ready mixed producer cannot jeopardize his major investment by short-cutting or resorting to chiselling practices. This is not to infer that the ready mixed producer is always blameless. Mistakes have occurred and will occur but they are usually limited to occasional loads rather than total production. As a basic premise it can be assumed that the ready mixed concrete delivered to the job has been made from good average commercial materials, properly proportioned and adequately mixed. It is suggested, therefore, that before the concrete is condemned, the testing procedure should first be investigated.

Support for the foregoing statement is provided by the article, "Practical Methods of Concrete Mix Design", by L. Boyd Mercer in the May 1954 issue of CONCRETE. This lists 60 factors that contribute to strength variations in concrete. Loom-

# Strength" Concrete

ing large are the factors under the heading, Testing, where some fourteen items are classified as causing considerable or appreciable variations. Under Batching and Mixing there are nine and under Cement, three. If the investigation of "below strength" concrete is approached on a purely mathematical basis, then logically the testing procedure should be high on the suspect list. Much of the embarrassment, the arguments and unnecessary interruptions caused by "below strength" test reports can be avoided if the architect provides for the services of a thoroughly competent testing laboratory. Concrete sampling and testing should never be entrusted to incompetent personnel. Methods that only approximate standard procedures are a complete waste and an invitation to unnecessary arguments and delays. The Concrete Industries Board Inc., of New York City, has recently published a *Manual of Recommended Practice for Inspection and Testing of Concrete Materials and Concrete*. This is worthwhile reading. Among the recommendations in the manual are: first, that the owner or architect, but not the contractor, should employ a qualified testing laboratory; second, the laboratory should be selected on a professional basis, not by competitive bidding; third, specifications should be amplified to cover inspections, testing and reporting.

The following chart highlights the important steps to be taken in preparing and casting cylinders. Certain points, however, warrant amplification and further emphasis.

## Composite Samples

The quality of concrete varies somewhat from the front to the back of a transit-mix truck. This in itself is not too important in the form because variances are equalized by spading and vibration. In sampling, however, variations can seriously distort the strength of the cylinders. Cylinders should always be made from composite samples taken from three parts of the load. The preferred

procedure is to discharge the three samples into a waiting concrete buggy reserved for testing purposes and then thoroughly remixed with a shovel before casting the test cylinders.

## Curing and Protecting Cylinders

After casting, the cylinders should be left undisturbed for a period of twenty-four hours, before being transferred to the laboratory for curing and testing. During this period the cylinders should be kept in a storage box or other means provided to maintain the temperature of the cylinders between 60 to 80° F. Occasionally, test specimens are made for determining when a structure may be put into service and are stored adjacent to the structure so that they will be subjected to the same temperature conditions as the structure. Such specimens should not be confused with the specimens stored at 60 to 80° F. The specimens stored at 60 to 80° F. are the specimens which are tested to determine compliance of the concrete with the specified strengths. Specimens stored under any other conditions are non-standard and cannot be considered in determining specification compliance.

Job records should be kept showing when the cylinders were cast, storing conditions, and when they were shipped to the laboratory. If cylinders have been left around the job for three or four days, it is pointless to compare their results with those that have been handled in the proper manner.

## Evaluating Test Reports

The American Concrete Institute, Committee 214, in its report, Recommended Practice for Evaluation of Compression Test Results of Field Concrete, states that the inflexible strength requirements contained in some specifications are unrealistic and that a pattern of results rather than individual reports represent the only sound basis of evaluation. The Committee report also states "the

primary function of compression tests of field concrete is to insure the production of uniform concrete of desired strength and quality . . . In addition to the variations which exist in the concrete itself, strength variations will also be introduced in fabrication, testing, and care of test specimens. Variations in the strength of concrete must be accepted, but consistent concrete of adequate quality can be produced with confidence if proper control is maintained, test results are properly interpreted, and limitations are considered." And further: "Test specimens indicate potential rather than actual strength of a structure, and poor workmanship in placing and curing may cause strength reductions which are not reflected in tests. Wherever possible conclusions on strength of concrete should be derived from a pattern of tests from which the characteristics and uniformity of the concrete can be more accurately estimated. To place too much reliance on too few tests may result in erroneous conclusions." In no case should reliance be placed on a single specimen.

Though it is not the author's purpose to condone or to recommend the acceptance of "below strength" concrete, nevertheless, the architect should be prepared, under certain conditions, to make a practical evaluation in the light of actual design requirements. Here, consultation with the consulting engineers is indicated because of the usually high factor of safety in most reinforced concrete design. Certainly there will be cases where it will be expedient to leave "below strength" concrete in place rather than hold up the job until it can be replaced.

## Tests of Hardened Concrete

There will be cases where testing was carried out in strict accordance with the proper procedure yet where the test results show "below strength" concrete. This requires field tests of the hardened concrete in place. In

(Continued page 40)

# Branching Out on Repeat Business

**Having delivered satisfactorily on a previous contract, Jennings Ready-Mix, Inc., Norwalk, Ohio, gets a request to furnish 20,000 cu. yds. to a job 40 miles away. Their answer: set up a plant in Ashland, nearby to the site, and try for some of the local business while delivering to the large contract.**

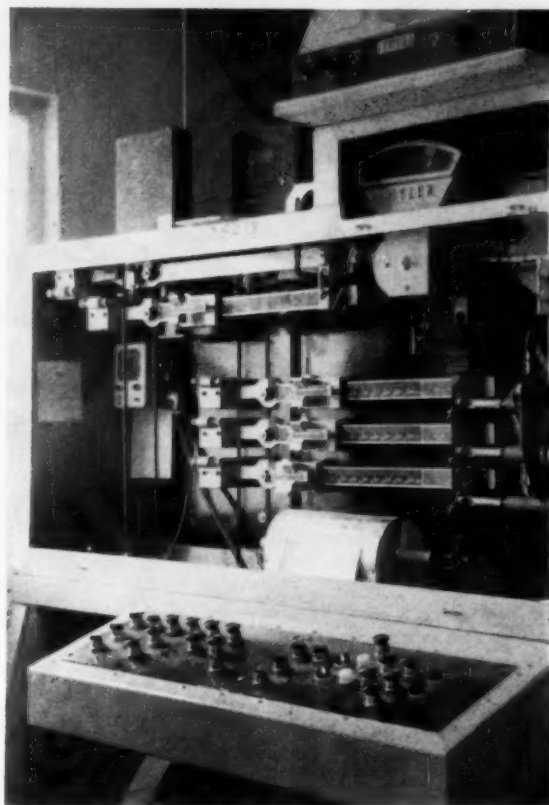
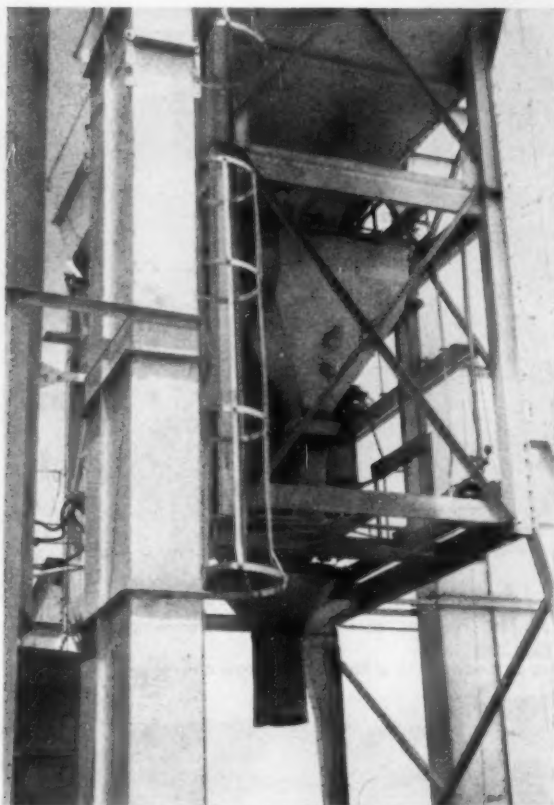


**"A** satisfied customer is often a repeat customer." The origin of this maxim is uncertain, but the business concept probably dates back to cave-man times and had its beginning when one hairy fellow with a pastime of chipping out stone axes was approached by a neighbor with a proposition—a trade, one stone axe for one side of meat. After the trade, the neighbor, hefting the axe and giving it a swing or two against a prehistoric beast, decided that here was the stone axe that just fitted his grip and strength—here was the hacking weapon he'd always wanted. So, in a happy and generous mood, the neighbor decided his nearly-grown son needed a stone axe also; he made a second trade. And the stone-chipping cave man was in business, beginning with a satisfied customer.

Today this same maxim of satisfied business customers is just as strong an influence on repeat sales as it was eons ago. When a ready mixed concrete producer batches and delivers quality concrete when and where a customer wants it, the producer's likely to get a crack at other jobs for the same customer.

Such was the case for Jennings





Ready-Mix, Inc., Norwalk, Ohio. Since their price, quality, and delivery schedule had been just what the contractor had wanted for a strip of the Ohio Turnpike, this same contractor approached the company again when he had some more work with concrete in the area.

Actually, though, the contract was for appurtenances along a strip of highway just outside Ashland, Ohio, nearly 40 miles southeast of Jennings' plant in Norwalk. And initially, as the story was told, the contractor first contacted the already-established ready mixed producer in Ashland, a city of approximately 16,000 people. But, instead of finding a producer interested in gaining 20,000 cu. yds. of new business, the contractor discovered Ashland's producer already had more business than he could handle with his present equipment and was unwilling to take on any more commitments.

It was then that the contractor, remembering and liking the service and quality Jennings Ready-Mix had furnished, approached the company's management with the proposition that they set up a plant at Ashland.

To Jennings' management, the

contract for 20,000 cu. yds. being dangled in front of them was a sizable inducement, but the possibility of capturing a chunk of the concrete business in Ashland turned the trick.

Next choice was the type of plant. The company finally made the decision for a portable HP-35 Butler Bin Co. installation that could be moved if the local Ashland business didn't measure up to expectations.

Delivery and erection took place during February of this year. Since then, according to one statement, they've captured an estimated 35 per cent of the concrete business in Ashland. Production, now running between 60 and 70 cu. yds. per hour on good days, is going half for state work and the other half to local contractors. The portable plant, as installed, has a designed capacity of approximately 90 cu. yds. per hour; but Vern Tidswell, manager of the new Ashland branch of Jennings Ready-Mix, says he hasn't been forced to test capacity production as yet. (In other installations using crane charging of aggregates, the HP-85 is said to deliver up to 200 cu. yds. per hour.)

As to quality, Mr. Tidswell said

there have been no complaints so far from state inspectors. And since the raw materials going into local jobs are identical to those being delivered for state work, the contractors in Ashland are getting better concrete than they bargained for.

For instance, the aggregate going into Ohio highway work has to be maintained in storage piles in a saturated, surface-dry condition prior to mixing to insure the specified water content when it's delivered to the job. And so, all aggregate in stock piles is kept sprinkled, including aggregate going to local work. The sprinkler system consists of a water pipe running up through the aggregate piles. On top is a spray device that emits a fine mist; this is kept running all the time.

And since Ohio highway specifications call for the cement to be tested at the mill as well as from samples taken from the shipment as it's received at the ready mixed plant, all cement coming in to Jennings' plant undergoes the same tests—whether the concrete eventually goes to the highway project or ends up as someone's basement. Here is another factor tending to make sales to local

contractors and builders easier.

As to quality stemming from the correct quantities of cement, aggregate, water, etc., going into the concrete, the local purchaser is again getting a fair shake from Jennings. While the new scales and water-metering equipment are automatic and not so subject to human error, the product, concrete, undergoes continual tests for strength; thus any errors or faulty adjustments that did develop would likely show up fairly quickly in cylinder tests of the concrete.

In deciding for the portable, HP-85, Butler Bin Co. plant, the Jennings people had in mind two aspects: they wanted a plant that could be uprooted and placed elsewhere if the demand in Ashland didn't warrant continuing operation after conclusion of the highway contract; also, they wanted a large-enough and sturdy-enough plant to handle business if what they hoped for proved out.

Most of the plant changes were in the form of additions. The foundations were put in a little more sturdily; instead of charging the aggregates by crane, they installed a vertical bucket conveyor; the controls, on ground level for easy communication with the drivers, are enclosed in a concrete-block structure rather than a make-shift frame affair. In actuality the controls are at the rear of the office.

The plant site, on the north side of Ashland, the side nearest the highway project was, in times past, a concrete block manufacturing concern that because of outdated equipment lost out in the competitive struggle. The other buildings of the block plant are used as storage area for the other products Jennings Ready-Mix, Inc., keeps around for sale to contractors.



● Above: Charging the aggregates conveyor with a front-end loader.

● Below: Bulk cement is unloaded into a horizontal screw conveyor.



## "Below Strength" Concrete

(Article begins page 36)

the case of floors, A.C.I. designation 318 requires that the portion under suspicion shall be subjected for 24 hours to a superimposed load equal to twice the live load plus one half the dead load. If deflection is excessive then the structure must be modified or if failure is evident, the section should be replaced. On other sections such as walls or footings,

cores can be taken to compare with the laboratory specimens. Consideration, however, should be given to job temperatures. Concrete poured at low temperatures has a relatively low early strength yet a higher ultimate strength than that poured at high temperatures. In cold weather concreting field strength development can be accelerated by housing the area and injecting live steam. This method has also been used as a last resort before replacing doubtful concrete. It is worthy of consideration.

A third method of testing, the re-

bound hammer, has received recognition in recent years. The device, a Swiss invention, was introduced into Canada by an associate of the writer. The test is simple and non-destructive. The mechanical test hammer is held against the concrete surface and the rebound of a spring-propelled hammer is measured much as in testing steel. The hammer method of testing has been the subject of many technical papers and is now generally recognized as an excellent qualitative though not necessarily quantitative tool in the hands of a skilled techni-

cian. It is interesting to note that the strengths obtained by this method are generally lower than the actual strengths of the concrete in place.

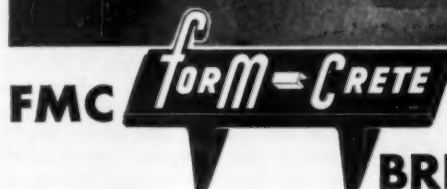
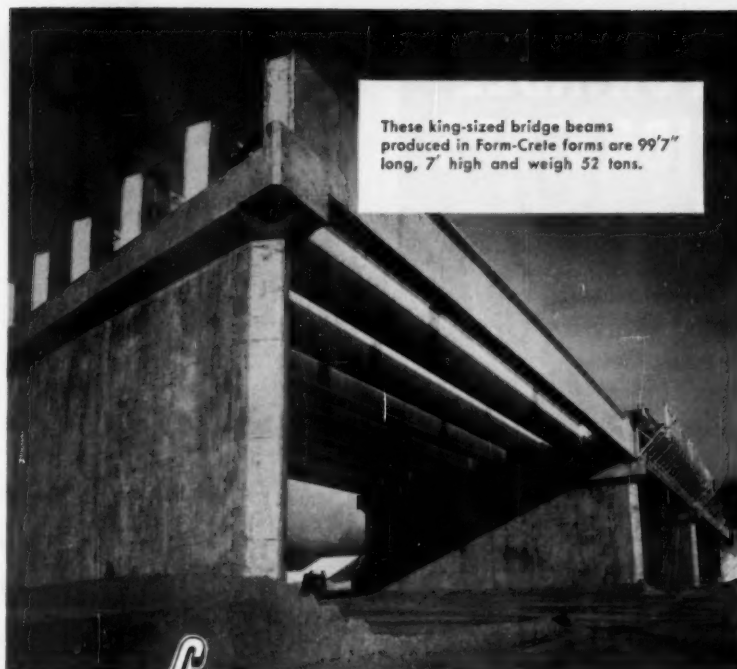
### Records and Reports

Adequate records and reports enable the architect to keep in touch with the work while it is in progress and detect trends. The plotting of actual compressive strength results against specified strength on graph paper is not a particularly arduous task for the job engineer or clerk-of-works and provides a quick and worthwhile check. The graph can be accompanied by a record of pertinent information relating to each compression test such as temperature, slump, location of pour, placing and curing conditions, etc. If the cylinders have been made or transported by other than testing laboratory personnel, then this should be noted. This is most important.

### Conclusions and Recommendations

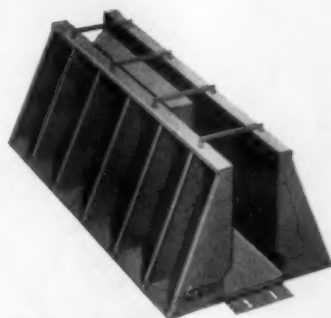
The following are based on the assumption that the concrete involved was supplied by a ready mixed supplier of known integrity, or in the case of job-mixed concrete, the contractor had exercised reasonable control over ingredients and mixing.

1. "Below-strength" test reports are usually indicative of improper testing procedures rather than sub-standard concrete.
2. It is impossible to over-emphasize the importance of correct testing procedures. Particular emphasis should be placed on securing proper composite samples and then protecting the cast cylinders from temperature extremes, particularly high temperatures.
3. The testing laboratory should be considered as a professional rather than a commercial service and as such should not be selected by competitive bidding.
4. Reports of cylinders that were not made in strict accordance with correct procedure should be discarded.
5. Variances in actual strengths must be expected. The architect should consider averages and indication of general uniformity rather than individual results.
6. The strength of "doubtful" concrete in place can be adequately checked by the impact hammer method, providing sufficient readings are taken by a qualified technician.



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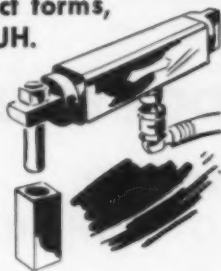


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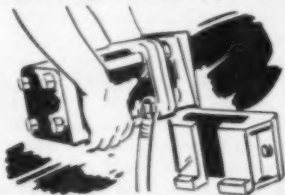
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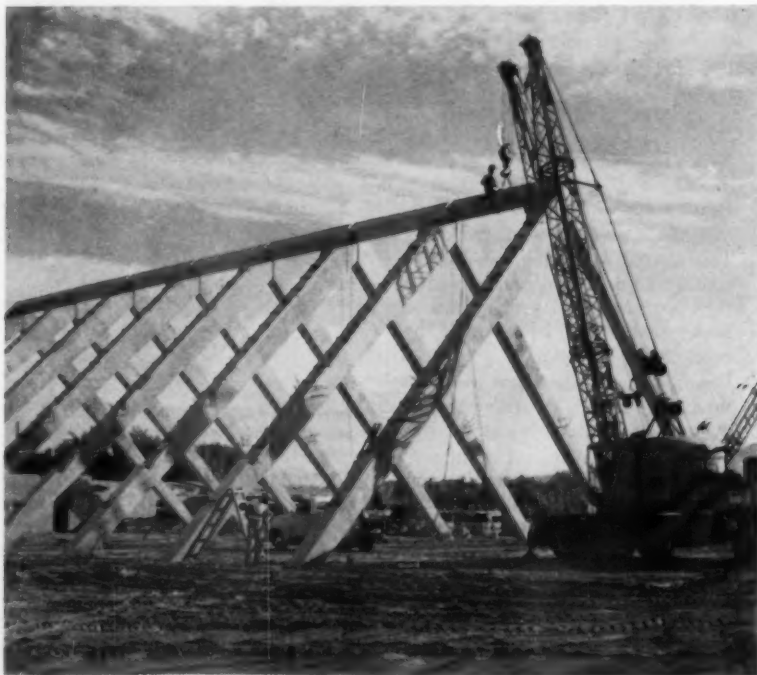
# Cool Concrete

Summer temperatures around China Lake, Calif., on the Mojave Desert, quite frequently make the thermometer top out at 115°F. And the daytime heat bounces off white surfaces.

In designing China Lake's new All Faith Chapel, completed in mid-1957 at a cost of approximately \$354,000, architects Austin, Field, & Fry, Los Angeles, chose concrete for the exterior and interior. The architects, in deciding for concrete, emphasized that the material gives a feeling of strength and a feeling of coolness. Both precast large sections and pumice block were used in the chapel.

The steep triangular roof of the church rests on ten pairs of precast reinforced concrete beams joined together at their apexes and fastened to concrete footings a few inches below the ground. V-shaped ridge caps, also precast, each weighing 4 tons, fit into the notches along the tops of these beams. A total of 208 light green-toned slabs of precast concrete rest on these supports. Each roof slab is 50 in. wide and 16 ft. long and weighs 2¼ tons. The slabs are fastened to steel plates cast into the concrete supporting beams.

The mid section of the church front is a long section of concrete



● Pairs of precast, reinforced-concrete bents give strength to the walls of the All Faith Chapel at China Lake, in the Mojave Desert.



# in The Desert

BY POWELL and  
EDNA JENKINS

reaching to the apex of the triangular front. This slab begins atop a massive concrete opening for the pair of double entrance doors. The patterned slab of concrete was cast with open insets for colored glass crosses. Spaces between the crosses are filled with a depressed design.

The church interior has been left open and unadorned. Pumice walls end about half way up the concrete beams. These exposed concrete beams are off-white against the cool green roof slabs. The altar end of the church lifts the eye up to the apex of the triangle. At the back of the church the colored glass crosses brighten the area from the choir loft to the ceiling line. Windows with rippled colored glass panes are set in the pumice wall.

Both exterior and interior design emphasize coolness and strength. Outside the ends of the concrete beams are exposed at their bases below the slanting roof. The roof projects to cover the walkway along each side of the church.

Precasting concrete for buildings is not new in construction, but new ways in which it is used are always interesting. To see beams of concrete cast on the construction site, later lifted into place by large cranes brings out scores of "sidewalk engineers".

The All Faith Chapel is a successful design for two reasons: it fits the need for coolness without being cold and impersonal and it gives a feeling of impressive strength without being unduly heavy. The materials blend well and the end product is one of beauty.

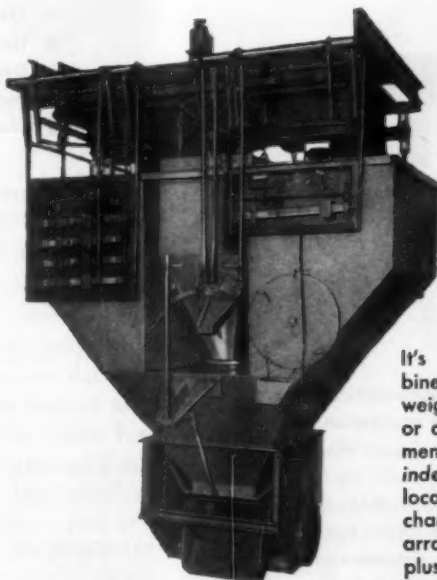
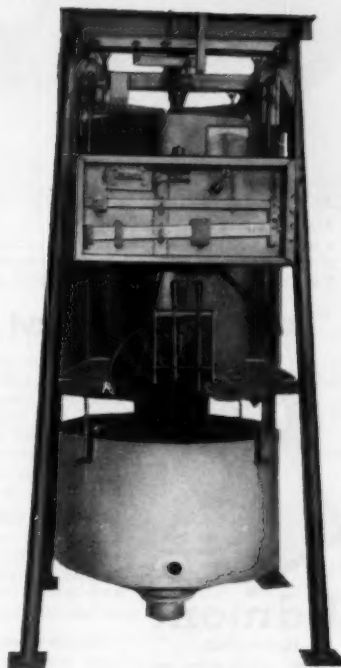
Block for the church were furnished by Calcrete Block Co., Bakersfield, Calif. The precast roof slabs came from C. D. Welles & Co., Sun Valley, Calif.; and the bents were poured on the site by the contractor.

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# A Look at What's New in EQUIPMENT and MATERIALS

## Lippman Develops New Line of Mobile Hoppers

Lippman Engineering Works, Inc., Milwaukee, Wis., is offering a new line of mobile hoppers mounted on structural beam chassis frames. The accompanying illustration shows a 10-cu. yd. hopper, 8 ft. square feed-



ing onto a belt conveyor with a discharge height of 9 ft. Over-all height of the unit is 10-ft., 9-in., width is 8 ft. and length 27 ft. Truck frame is 17 ft. long. Hoppers in other sizes are available to meet requirements.

For additional information write to Lippman Engineering Works, Inc., 4603 W. Mitchell st., Milwaukee 14, Wis.

Enter K52 on Inquiry Card

## Improve Roto-Bin-Dicator With Engineering Changes

The Bin-Dicator Co. of Detroit has announced important engineering changes in the Roto-Bin-Dicator introduced to industry in October of 1955 and today a commonly employed bulk material level control device. The improvements were made to permit the use of this equipment where severe or rugged operating conditions may exist, such as vibration and high stresses on the paddle and shaft assembly.

The Roto-Bin-Dicator, available in standard and explosion-proof models,

is particularly adaptable to installations in bins under pressure or vacuum; bins, chutes or conveyors handling materials containing large lumps which tend to "bridge" over a diaphragm; and bins handling materials which tend to "rat-hole" and prevent operation of a diaphragm. To circumvent these problems, the Roto-Bin-Dicator has a slowly rotating paddle, mounted on a flexible shaft. This projects into the bin and is driven by a small motor mounted in a housing outside the bin.

When material in the bin partially or entirely covers the paddle, the rotation of the paddle is stopped and the torque exerted by the motor actuates a Micro-switch in the motor housing. When material drops below the paddle, rotation is resumed and the Micro-switch returns to normal position. According to the manufac-



turer, the explosion-proof Roto-Bin-Dicator is the only rotating paddle-type bin level indicator to bear the Underwriters' Laboratories label for use in hazardous atmospheres Class

I, Groups C and D; Class II, Groups E, F and G. This includes vapors of ethyl ether, gasoline, petroleum, alcohol, acetone, lacquer solvent, natural gas and atmospheres charged with grain dust, carbon black, coal or coke dust, and atmospheres containing metal dust, including aluminum, magnesium, and their commercial alloys.

Copies of Bulletin 8C, giving details of the important construction and operating features of the improved Roto-Bin-Dicator, with current prices are available from the Bin-Dicator Co., 13946 Kercheval Ave., Detroit 15.

Enter K53 on Inquiry Card

## Yale Develops New Hydraulic Oil System

Engineers of Yale Materials Handling division, Yale & Town Mfg. Co., Philadelphia, have announced development of a supercharged hydraulic oil system for lift trucks. This is said to eliminate surging in the hydraulic tank and danger of getting air bubbles in the lines and pump. This new development is being made a standard integrated design feature in all Yale rider-type gas, LP-Gas and electric powered lift trucks. The presence of air in excessive amounts in a lift truck hydraulic system can lower hoist speeds, cause hoist cavitation and, in extreme cases, lead to pump failure.

In the new Yale system, the free flow hydraulic return line brings the hydraulic oil into the tank at a mid-point on the inboard side. A metal pipe conveys the oil straight down into one end of a channel shaped passage welded to the bottom of the tank. The suction line leading up out of the tank into the hydraulic system is located at the other end

of this passage. Action of the hydraulic pump pulls the oil through the passage and into the suction line in a smooth, steady flow. A series of apertures along the sides of the

channel passage bleed off excessive oil and pressure smoothly preventing a bubbling action in the oil remaining in the tank.

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## Columbia Machine Has New Turntable

A new turntable with two cubing platforms designed to speed the work of the cubing offbearer and make stacked cubes more readily accessible to the lift truck operator, is now being produced by Columbia Machine, Vancouver, Washington. The manufacturer says the new turntable was developed by Columbia engineers to meet the increased production speeds of concrete block manufacturing made possible by the adaption of Columbia's new automatic rack loader and unloader attachments.

The two platforms mounted directly opposite each other on the perimeter of the turntable which serves as their base are geared to

make a half turn with each half turn of the base table. As the cubing offbearer completes one cube, the turntable is revolved a half turn bringing the second and empty platform into position ready for cubing. The stacked cube is then in proper position with cores facing outward for lift truck pick-up. The entire turntable mechanism is powered by an enclosed gear head motor. Conduit, motor and chain drive of the turntable are designed for a recessed installation. The turntable which is 12 feet in diameter and the two 4-foot square platforms are fabricated from heavy steel plate.

Complete information may be obtained by writing Columbia Machine, 107 S. Grand, Vancouver, Wash.

Enter K55 on Inquiry Card

# THANK YOU!

Thank you, the Concrete Products Industry, for your many orders. Even though many businesses in the country have been faced with a "recession," we have just had the best months in our history, and we want you to know that we appreciate your business.

We have added more men in our factory to enable us to continue to give you prompt

service and top quality equipment — at prices you like to pay.

Through your confidence in our Company, shown by the ever-increasing demand for Prashak Equipment, we have truly become a leader in the field.

**PRASHAK MACHINE COMPANY**  
**MARSHFIELD, WISCONSIN**

Manufacturers of Concrete Products Equipment



## Soiltest Has Portable Cylinder Test Machine

A new low cost portable concrete testing machine has been announced by Soiltest, Inc., Chicago, Ill. The tester makes possible rapid on-the-job-testing of standard 6-in. X 12-in. concrete cylinders.



The tester is entirely self-contained and no electrical or pressure connections are required. Loads are developed by a hand operated pump which actuates the piston of the main hydraulic system. The high pressure hydraulic system makes it possible for the light weight machine to develop test loads up to the 200,000 lb. load capacity. The machine weighs only 400 pounds. It is equipped with a large diameter gauge which reads directly in total load applied to the specimen. The gauge has a maximum load pointer to indicate the point of specimen failure.

All parts of the machine are designed for easy transport and maintenance. The hydraulic loading head, gauge, pump and platens are easily detached from the machine. Each machine is factory calibrated to be accurate within 1 percent of indicated load. U. S. Bureau of Standards certified calibration equipment is used in the calibration. The tester meets ASTM and AASHTO standards for accuracy. Complete information may be secured by writing Soiltest, Inc., 4711 W. North ave., Chicago 39, Ill.

Enter K56 on Inquiry Card

## Bergen Simplifies Way To Change Block Height

Bergen Machine & Tool Co., Inc., Nutley, N.J., offers a new means of

simplifying the task of changing block heights on rear pallet feed block machines. With the aid of Bergen's slotted blocking pieces, the rather formidable task of raising the chain conveyor, when changing from 7-5/8 in. to 3-5/8 in. high block, has become a fairly simple operation. Formerly, it was necessary to remove 1 x 12 in. bolts, add 4-3/8 in. blocks, and then try to get a 1 x 16 in. bolt through the blocks. By using Bergen's new blocking pieces, a quick-change-over can be accomplished in minutes, sparing mechanics hours of hard work.

Bergen's quick-change slotted blocking units consist of No. 1260F . . . 1-9/16 in. slotted blocking; No. 1260E . . . 4-3/8 in. slotted blocking; and No. 3565 . . . 1 x 16 in. machine bolt. In the assembly, the blocking is turned so that the open slots face the inside of the block machine before the bolts are tightened. When reversing the process, the bolts are merely loosened, not removed, to rearrange the blocking.

More information is available from the Bergen Machine & Tool Co., Inc., 189 Franklin Ave., Nutley 10, N.J.

Enter K57 on Inquiry Card

## UNIFORM PRODUCTION

FOR BLOCK AND READY MIX PLANTS

### HYDROBOT

FOR UNIFORM  
BLOCK PRODUCTION

HYDROBOT is an electronic instrument to automatically shut off the mix water when the mix is the proper consistency.

ACCURATE — Will duplicate batches with far greater precision than human judgement.

SIMPLE — Installed by your own maintenance man. Single dial adjustment. Allows easy setting for any moisture requirement.



\$278.00 Delivered Less 2% 10 Days

### MARK X, H<sub>2</sub>O METER — FOR UNIFORM

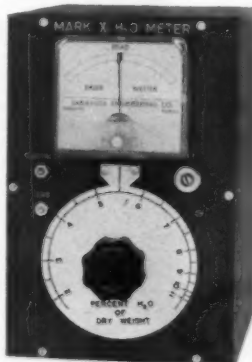
READY MIX PRODUCTION

The MARK X is an electronic instrument to determine the moisture in fine aggregates, such as sand, screenings, etc.

ENGINEERED — to be the most reliable and accurate instrument produced for the purpose at any price.

POPULAR — Most widely used Moisture Meter ever marketed — THE STANDARD OF THE READY MIX INDUSTRY.

Automatic MEMORY — The batcher can see at a glance what his previous moisture has been and whether or not it has changed since the last batch.



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CABLE ADDRESS: "SARENCO"

## Booms Help Lift Trucks Do Work of Yard Cranes

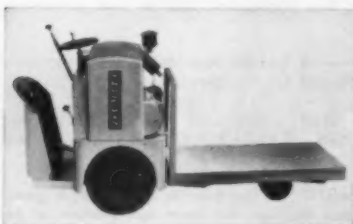
Boom-equipped lift trucks according to Hyster Co., Danville, Ill. industrial truck engineers, offer many short cuts in handling large bulky items such as machinery, engines, shop equipment or timbers difficult to handle with conventional fork lifts. The company also points out that boom-equipped lift trucks may be used for unloading cars and trucks and for spotting loads in hard-to-reach places. A new brochure describing the type and capacity of booms available for mounting on Hyster equipment has just been issued.

Four types of booms are available according to the brochure. Trucks from 2000 to 8000 lb. capacity are equipped with a boom which has a sliding hook that may be locked in any position on the boom. Booms from 8 to 16-ft. long are available for trucks in the 10,000 to 12,000 lb. capacity range. Two types are available for trucks of 15,000 lb. to 20,000 lb. capacity, one with manual topping and the other with a hydraulic topping cylinder. The brochure may be obtained by writing the Hyster Co., 1003 Myers St., Danville, Ill.

Enter K58 on Inquiry Card

## Truck-Man Lift Has New Platform Model

Truck-Man Lift Trucks, Jackson, Mich., announces a new Model 75, rack handling, platform lift truck with a 7500 lb. capacity for the largest block racks. The new truck features one finger power steering, elec-



tric starter, and a "No-Spin" differential that delivers constant power to both drive wheels from the powerful gasoline or LP gas engine. Either wheel will drive the truck if the other is on ice, grease or in a depression where it does not have traction. The standard platform is 28 in. wide by 60 in. long but wider platforms are

available and length may vary from 54 in. up. The model 75 has a 9 in. hydraulic power platform lift. Lift is vertical for close placement of racks. Standard trucks have a platform lowered height of 9-3/16 in. when equipped with 9 in. dia. load wheel and a lowered height of 11-1/4 in. with a 10-1/2 in. dia. load wheel. Risers are available to increase down heights where desirable.

According to the company, exceptional flotation is provided for on the new truck. For yard use, pneumatic

drive tires are 23 x 8.00-10 ply for maximum traction; for indoor use, 6.50 x 10-10 ply pneumatics are normally furnished, but 6.50 x 10 Notat tires are available where pneumatic tires would be impractical. Mold-on type load wheels are a full 7 in. wide for extra footing on soft ground when used outdoors.

Free literature and special information will be sent on request to Truck-Man Lift Trucks, 570 Liberty St., Jackson, Mich.

Enter K59 on Inquiry Card

## Size, Dependability, Low Power Consumption Are Features of Motorola's Transistorized Mobile Radio

A step towards completely transistorized two-way mobile radio has been achieved by Motorola in its new Motrac radiophone, now undergoing operational field tests.

With the receiver and power supply transistorized, and the transmitter partially transistorized, the new Motrac unit, according to the manufacturer, has three advantages — compact size, low power consumption, and reliability — over previous units using tubes in all or most of the components.

More than 20 transistors are utilized to provide the Motrac radiophone with reliability standards and current drain characteristics never before realized in a two-way mobile radiophone.

Printed circuitry, modules and die cast construction are employed throughout the unit to further its reliability, compactness and ruggedness. The entire unit is but 3 in. high, 11 in. wide and 17 in. long.

A primary advantage of the Motrac

Reliability is another great benefit of the Motrac radiophone. The long life characteristics of transistors automatically will provide extended, more reliable service to radio users.

In the Motrac radio power supply, four transistors replace such mechanical components as vibrators and dynamotors.

Transistors replace all tubes in the receiver of the Motorola Motrac radio and a transistor is used instead of a tube in the transmitter's audio amplifier stage.

Highly reliable printed circuitry boards, such as are used in subminiature military electronic equipment are used throughout the Motrac radio.

The Motrac radio chassis consists entirely of die-castings which not only provide ruggedness but also act as heat conductors. The entire Motrac radio makes use of modular construction for greater maintenance ease.

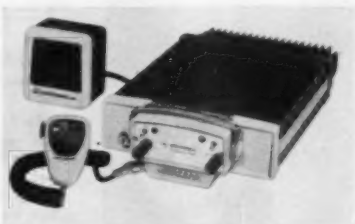
The new development will be available for operation in both the low (25-54 Mc.) and the VHF (147-174 Mc.) frequency bands. The Motrac radio provides 25 watts power output in the higher band and either 30 or 50 watts in the lower band.

The receiver has an audio output of 5 watts.

The new radiophone is universal mounting, either trunk or under the dash and is available in standard (carrier squelch only) and in Dual-Squelch "Private-Line" (carrier and coded tone squelch) models.

More information can be obtained from Motorola Inc., Communications and Industrial Electronic Division, 4501 W. Augusta Blvd., Chicago 51, Ill.

Enter K60 on Inquiry Card



unit and its extensive transistorization is its low power consumption characteristics. The complete unit draws but 1.82 amps, one third that of regular two-way radios, while on standby duty — that is, just turned on waiting to hear a message, a condition in effect 99 per cent of the time.

*Designed to meet the most exacting specifications of*

Federal, State and Municipal regulations.

## NORWALK SEPTIC TANK MOLDS—

**FOR MAKING  
APPROVED SEPTIC TANKS**

Build rectangular, concrete septic tanks that will meet the approval of local health officers and sanitary engineers . . . build them quicker and at lower cost with NORWALK equipment.

*Financing may be arranged.*



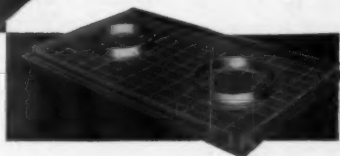
May be manufactured in any size from 500 up to 2000 gallons working capacity.

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the plastic coated glove of industry!



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\$305 Palm coated



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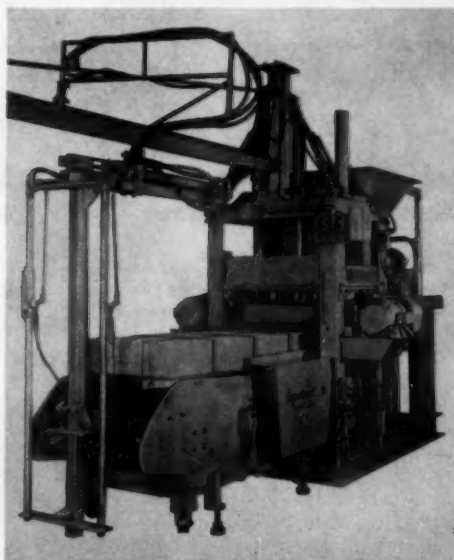
DETROIT 9, MICHIGAN

# BIG THINGS are happening at LITHIBAR

Engineering of the highest professional calibre has been having full sway of Lithibar, resulting in mechanical and automatic refinements that have lifted the Imperial Two- and Three-Block Machines to new levels of dependable, cost-cutting production. Coordinated with these advances, Lithibar has also put into effect the most favorable terms and net delivered prices and a policy of making special attachments available on a low-cost rental basis. By all means learn about the Big Things that are happening at this progressive, forward-looking company.

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NOW!**

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Address \_\_\_\_\_ ☐ SKIP HOISTS  
City & State \_\_\_\_\_ ☐ MIXERS  
☐ OTHER LITERATURE

Mail To LITHIBAR COMPANY, Dept. C, HOLLAND, MICHIGAN



## Whiteman Has New Fork Lift Truck

A new fork lift truck built on the chassis of the Whiteman power buggy is announced by Whiteman Mfg. Co., Pacoima, Calif. The manufacturer says the new unit will lift palletized loads up to 7-ft. 10-in. high, will travel on narrow runways and turns on a 45-in. radius. The new lift truck is powered by a 6.8 hp. Wisconsin gas engine, has automatic clutch and forward and reverse gears. Complete specifications may be obtained by writing Whiteman Mfg. Co., 13020 Pierce St., Pacoima, Calif.



Enter K61 on Inquiry Card

## New Power-Steer Tractor Shovel Offered by Case

A new 4-wheel drive, rear-wheel power-steer tractor shovel, designated the W-9 Terraload'r, is featured by J. I. Case Co., Racine, Wis., in Bulletin CTS-111, just issued. Complete specifications and illustrations of job applications are included. The 12 page, 3-color catalog shows interchangeable buckets from 1¼ cu. yd. to 2¾ cu. yd., for digging or handling various types of materials. Operating advantages of balanced design, which takes into account fore-aft and lateral weight distribution, as well as power requirements, are explained and illustrated. Other benefits, such as safety-engineered short, rigid lift-arms pivoted ahead of operator, automatic sight-leveling gauge, operator-designed cockpit, etc., are also pointed out. For free copy, write J. I. Case Co., Racine, Wis., for Bulletin CTS-111.

Enter K62 on Inquiry Card



## Columbia Develops New Roman Brick Splitter

Columbia Machine, Vancouver, Washington, has developed a new accessory for the Columbia splitter which makes possible faster and cleaner splitting of Roman brick clusters. The attachment applies uniform pressure to top, bottom and sides of the cluster and therefore eliminates loss from breakage. This simple mechanism can be quickly installed on any Columbia splitter by one man and can be easily removed when not in use. No alterations to the block splitter is required.

The new cluster splitter attachment is now being marketed through Columbia Machine field representatives. Specifications and detailed description of this new device may be obtained from the factory headquarters, 107 S. Grand, Vancouver, Wash.

Enter K63 on Inquiry Card

## GE Issues Guide For Industrial Radio Users

General Electric Co. has issued a 16-page booklet entitled "Under The Influence of Radio" as a guide for prospective users of mobile radio equipment. The booklet shows the numerous ways radio is useful to drivers and it illustrates benefits accrued by customers of those whose cars and trucks are radio-equipped. Included is information on licenses for base stations, mobile units and for drivers. The booklet also contains instructions concerning adjustments, how to send a message and maintenance.

Written in non-technical language, "Under The Influence of Radio" is designed primarily for business firms and communities considering two-way radio for the first time. It is available from Section P, General Electric Communication Products Department, Syracuse, N. Y.

Enter K64 on Inquiry Card

## Stow Mfg. Co. Has New Catalog on Vibrators

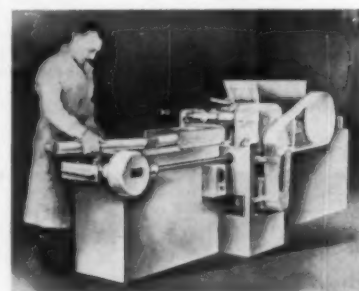
Stow Mfg. Co. has just put out a new 20 page catalog, No. 580, on Stow's complete line of concrete equipment. This covers Stow's universal electric vibrators, 60 cycle motor-in-head vibrators, power mid-get vibrators, gasoline operated vibrators, rotary trowels, portable concrete grinders, ceiling grinders, and vibrating screeds. Also, shown are complete directions for building your own prestressed screed beam. For a free copy of this new catalog write Stow Mfg. Co. 276 Shear St., Binghamton, N. Y.

Enter K65 on Inquiry Card

## Dunn Builds Machine For Swimming Pool Units

In line with the increasing demand for private swimming pools, W. E. Dunn Mfg. Co., Holland, Mich. is offering a machine to make coping stone and terrace stone expressly designed for swimming pool construction. Formed to fit the hand, the coping stone is made in two sizes: 12 x 24 and 8 x 24 inches. At its rounded edge, it is 2¼ inches thick, diminishing in a graceful curve to 1-5/8 inches. The terrace stone can be made 12 x 12 and 12 x 24 inches, each with a thickness of 1-5/8 inches.

Dunn executives point to the profit possibilities of this business as evidenced by the statement of one prominent products manufacturer who says that a 12 x 24-in. coping stone which costs 34c to produce is selling for \$1.70. The terrace stone is said to be equally profitable, especially when supplied with a Colorcreted surface.



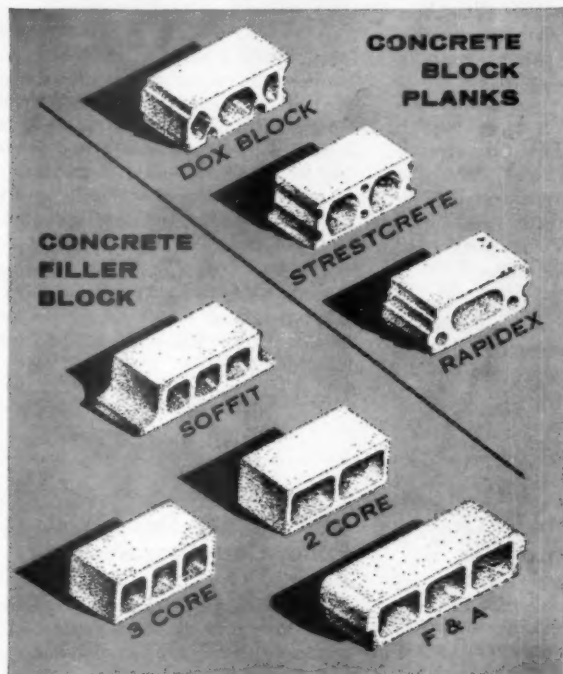
Additional information may be obtained from W. E. Dunn Mfg. Co., 318 West 24th St., Holland, Mich.

Enter K66 on Inquiry Card



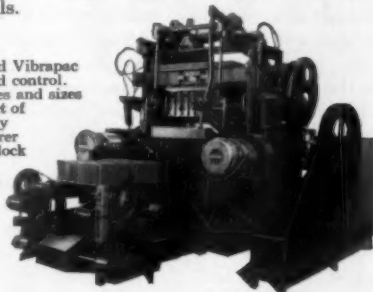
# Now-Block for Firesafe FLOORS and ROOFS

Add to your plant profits by supplying block for floors and roofs, in addition to wall units. The demand is increasing . . . profit margins are greater . . . sales possibilities unlimited.



• In addition to load-bearing block for walls, your Vibrapac can produce all types of block for floors and roofs . . . either floor filler block or units for concrete block planks. Why not take advantage of this highly profitable market? Produce floor and roof units as well as wall units. Ask your Besser representative for further details.

• Front Pallet Feed Vibrapac with automatic feed control. Produces ALL types and sizes of block on ONE set of Plain Pallets. Fully automatic. Off-bearer removes finished block with power hoist. No manual lifting.



**BESSER Company, Dept. 127, Alpena, Mich., U. S. A.**  
First in Concrete Block Machines

USING HOT WATER?

*nothing can  
compare with*

**Pick**

## HOT WATER HEATERS

- ✓ INSTANTANEOUS!
- ✓ Automatic, positive, temperature and volume control!
- ✓ Trouble-free!

no tanks  
no floor space

Just **Pick**  
in your steam  
and water line!

**Keep pouring concrete  
in all cold weather**

... like these folks in Illinois —  
who said, just recently\*:

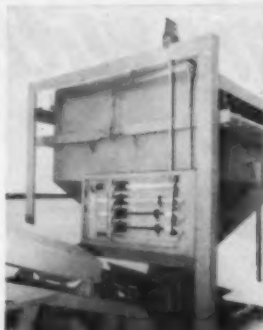
"Generally, we use 120° water . . . we have drawn water at 190° with a PICK Hot Water Heater . . . we can produce 100 yards per hour without trouble . . . any new plant that we would build would have a PICK heater in it, unless something entirely new would come along."

\*Since this was written, the author has returned to PICK to another proud experience.

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### Cardinal Scales

Built To Your Specifications  
Complete Blueprints Available



**CARDINAL SCALE Installation**  
Photo courtesy Ross-Porta-Plant  
Brownwood, Texas

Specify **CARDINAL** Suspension Hopper Scales for top efficiency in weighing cement and aggregates. Beam or dial type. Adaptable for all hoppers — can be installed to suit any requirement. Manual, semi-automatic or full automatic operation. Capacities: 500 lbs. to 100,000 lbs.

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- Easy to handle and assemble.
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Please send catalog and address of nearest  
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## Offers New Series Of Unit Vibrators

A new series of unit vibrators especially designed for "pin-point" installation on bins or hoppers up to 14-cu. ft. capacity, is announced by Eriez Manufacturing Co., Erie, Pa. Where materials being handled show a tendency to pack, bridge or stick in bins or chutes, the trouble is said to be readily overcome by applying one of the Eriez units at the precise point of difficulty. Its concentrated vibratory action insures a continuous smooth flow of material.

Requiring no rectifier, and working directly from either 50 cycle AC or 60 cycle AC with no change in any component, the new Eriez vibrators are further characterized by almost noiseless operation; nothing more than a muffled purring sound comes through the rugged weather- and dust-resisting housing which protects the unit. The primary vibration-producing element within the housing is a cast brass armature in which are permanently embedded powerful Alnico V magnets and suitable soft iron pole pieces.

Although no control box is required for the new Eriez vibrators, the manufacturers point out that by the use of controls the units can be made to operate with complete uni-



formity and maximum efficiency regardless of changes in load. When used in conjunction with a control box, a vibrator powerful enough to handle the heaviest anticipated loads can be installed, and the amplitude of vibration reduced as much as desired to handle ordinary or light loads.

Complete information regarding the new vibrators — known as V3A-10n, -20n, and -30n — may be obtained from Eriez Manufacturing Co., Erie 6, Pa.

Enter K68 on Inquiry Card

## Acme Issues Booklet On Powered Steelstrapper

Acme Steel Co., Chicago, Ill. has just issued an 8-page, illustrated booklet on its A4 pneumatic Steelstrapper. The manufacturer states that this is the first fully powered combination steel strapping tool.

The new booklet shows typical applications, pictorial operating instructions and specifications on the new tool which provides power for every operation after the strap is inserted. Tensioning, sealing and cutting are all done by air power. Each strap is power applied with the same predetermined tension by means of a throttle on the handle. Another control on the same handle produces a perfect sealed joint and cuts the strap flush with the seal. The A4 Steelstrapper can be positioned to apply either vertical or horizontal straps.

Copy of the booklet will be sent on request to Acme Steel Co., 135th. St. and Perry Ave., Chicago 27, Ill.

Enter K69 on Inquiry Card

## New Bulletin Describes Fuller Conveyor Systems

A new 16-page technical bulletin, describing and illustrating the applications of pneumatic conveying systems designed for handling dry bulk materials, is now being offered by Fuller Co., Catasauqua, Pa. The bulletin, numbered FK-26A, tells how pneumatic systems cut handling costs, increase efficiency and assure high production rate with minimum maintenance.

Twenty-seven photographs show various stages of operation, including hopper-car unloading stations, rotary valves, portable, stationary and sanitary pumps, loading bulk tanks and batching plants. Ten line drawings detail construction and operation through cutaway views of silos, hoppers, pumps and explain the pneumatic conveying system's many applications. For copies of Bulletin FK-26A write Fuller Co., Catasauqua, Pa.

Enter K70 on Inquiry Card

## New Coating Adds Life to Work Gloves

Edmont Manufacturing Co., Coshocton, Ohio, has developed a new glove coating process called "Extra-coat" which will give work gloves 20 per cent longer wear. The new process,



the manufacturer says, provides controlled application of extra coating on the palm area where wear is greatest, while the back of the glove gets only a normal coating.

Various types of coatings, the manufacturer says, have been developed to meet different service conditions. These different coatings include reinforced neoprene, vinyl plastic, natural rubber and reinforced Durox plastic. Complete information available by writing to Edmont Mfg. Co., Walnut St., Coshocton, Ohio.

Enter K71 on Inquiry Card

## Tells Why and How Of Wire Rope Lubrication

Reducing wire rope cost by lengthening its life through proper lubrication is the subject of a new booklet issued by Union Wire Rope Corporation of Kansas City, Missouri. The 12-page pocket size book briefly

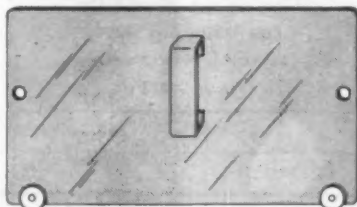
summarizes why the construction of a wire rope necessitates lubrication, the lubricants recommended for different types of wire rope and operating conditions and how to apply lubrication in the field. Union Wire Rope Corp. points out that the booklet is being offered not only to help wire rope users obtain more life from their wire rope — but in the interest of operating safety as well.

The booklet is available without charge to purchasing agents, plant superintendents, safety engineers and other personnel using or specifying wire rope. Copies can be obtained by writing Union Wire Rope Corp., 2100 Manchester Ave., Kansas City 26, Mo.

Enter K72 on Inquiry Card

## Bergen Offers New Block Height Gages

Bergen Machine & Tool Co., Inc., Nutley, N.J., has developed new lightweight block height gages weighing only a few ounces. The gages are available in three block heights: 7 $\frac{5}{8}$  in., 7 $\frac{3}{4}$  in., and 8 in. high. The new gages are intended for use when-



ever necessary, right at the block machine. The manufacturer describes the gages as being simple in design, having case-hardened "feet" that can be revolved to new positions when wear occurs. The handles are cen-

tered and firmly spot-welded. The entire instrument is electro-plated.

Complete information is available from Bergen Machine & Tool Co., Inc., 189 Franklin Ave., Nutley 10, N.J.

Enter K73 on Inquiry Card

## Offers Samples of New Masonry Cleaner

Edick Laboratories, Inc., developers of Etch, a new powered mason-

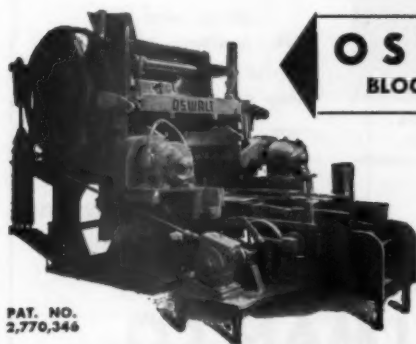


ry cleaner, is offering free samples of the product to their masonry supply dealers as giveaways to their mason contractor customers.

According to the announcement, 1/2-lb. samples, similar to the one pictured, will be given to masonry supply dealers who order Etch in case lots. The new cleaner is intended to replace muriatic acid.

Further information and prices are available by writing to Edick Laboratories, Inc., 427 W. National Ave., Milwaukee 4, Wis.

Enter K74 on Inquiry Card



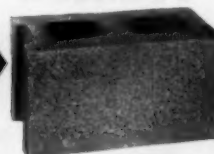
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**OSWALT**  
BLOCK MACHINE

Makes more Perfect  
Blocks per Hour

The exclusive Oswalt services built into this modern-design block machine insure maximum capacity, economy and quality of production. Now is the time to buy an Oswalt Block Machine—to take quick advantage of improving business, to increase plant efficiency and reduce operating costs.

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Small Ready Mix Concrete Sand & Gravel Plant in Northern California Sacramento Valley. Shows very good net — sell very reasonable. For more information write:

STANLEY W. WRUCK  
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One TD-6 International Cat with Henry back hoe. One Diamond T Truck with 6-yd. dump box — 1949 cab over engine. Both pieces of equipment in perfect condition.

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Cored steel pallets.  
Plain steel pallets.  
All sizes — New.

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### FOR SALE

New Clark Model CY40 Forklift Torque converter, automatic transmission, power steering, power brakes, block forks, side shifters, wide profile pneumatic tires, 4000 lb. capacity, 130" fork height.

At time of writing this ad, truck has not been shipped from factory.

\$1000.00 off list price.

Address: Box A-43, care CONCRETE  
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Concrete Products Equipment  
in Good Used Condition.

Forms and molds are in "big"  
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If your used equipment is  
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(See Page 46)  
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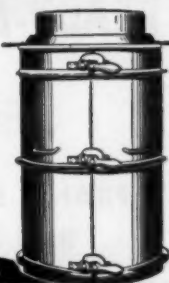
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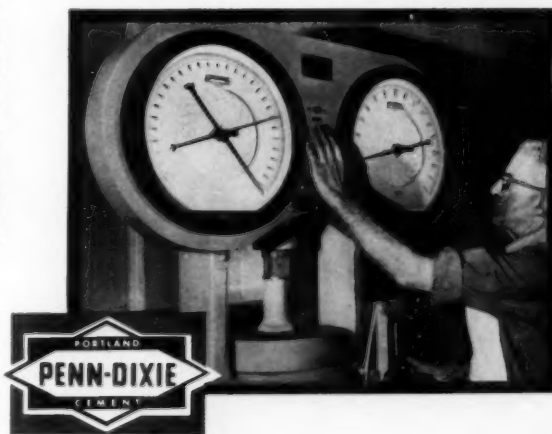
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For more information use postcard facing page 56.

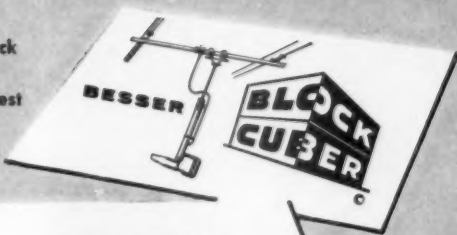
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